EXPC-1319 Series Hardware Manual

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EXPC-1319 Series Hardware Manual

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1

Introduction

Thank you for purchasing the Moxa EXPC-1319 series x86 industrial panel computer.

This manual introduces the hardware installation, connector interfaces, and BIOS setup of the EXPC-1319. For software configuration and management, please refer to the user's manual for your operating system.

The following topics are covered in this chapter:

- **Overview**
- **Model Descriptions and Package Checklist**
- **Appearance**
- **Features**
- **Hardware Specifications**
- **LED Indicators and Buttons**
- **LCD Panel and Touch screen**
- **Moxa Intelligent Heating Solution**

Overview

The EXPC-1319 panel computers are fanless, durable devices made for both indoor and outdoor hazardous environments. The EXPC-1319 series features the dual core Intel Atom D525 1.8 GHz processor, with up to 4 GB of memory available to deliver high performance processing. The EXPC-1319 is Zone 2 certified, and comes with two electrically isolated, software-selectable RS-232/422/485 serial ports alongside two Gigabit LAN ports, providing reliable serial and high speed Ethernet LAN transmissions with full network redundancy.

The EXPC-1319 computers come with a patented, fanless, streamlined enclosure designed for highly efficient heat dissipation, making this one of the most reliable industrial platforms available for harsh, hot outdoors environments like oil and gas fields or drilling platforms. In addition, EXPC-1319 computers come with an expanded set of self-health diagnostics that communicate over SNMP and may also be ordered with Moxa's Intelligent Heating Solution (IHS), a heating utility for use in extremely low temperature (-40°C) environments. Finally, these computers feature capacitive touch screen controls with glass-film- glass bonding, making them scratch- and glare-resistant and easy to read even during the peak daylight hours.

Model Descriptions and Package Checklist

The EXPC-1319 Series includes the following models:

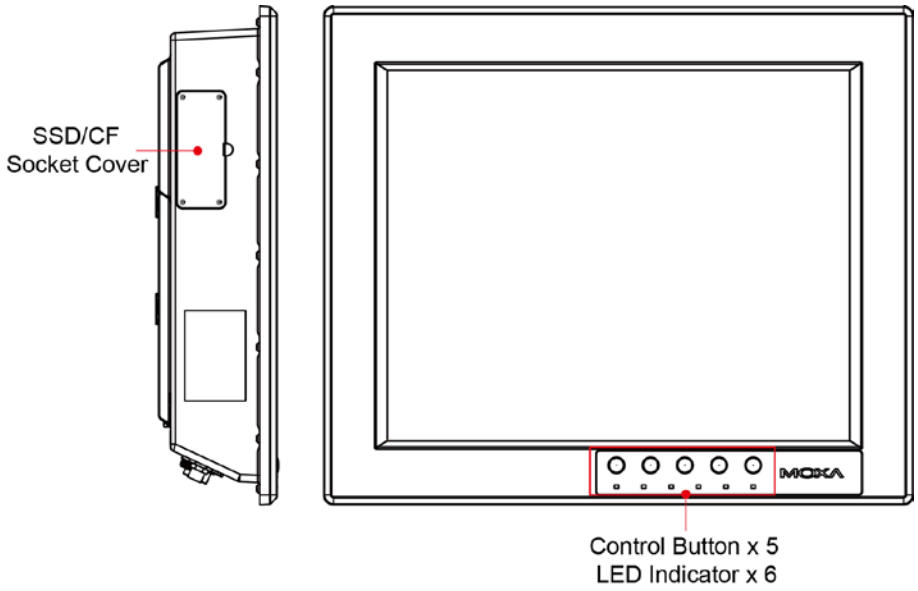
- **EXPC-1319-STS-W7E:** Fanless, industrial-rugged Zone 2 19-inch 1000 nits LCD panel computer, single point touch screen, IP66, dual core Atom D525 1.8 GHz CPU, -20 to 60°C operating temperature
- **EXPC-1319-STS-IHS-W7E:** Fanless industrial-rugged Zone 2 19-inch 1000 nits LCD panel computer, single point touch screen, IP66, dual core Atom D525 1.8 GHz CPU, -40 to 60°C operating temperature, with Intelligent Heating Solution (IHS)
- **EXPC-1319-MTS-W7E:** Fanless industrial-rugged zone 2 19-inch 1000 nits LCD panel computer, multi point touch screen, IP66, dual core Atom D525 1.8 GHz CPU, -20 to 60°C operating temperature (available on request)
- **EXPC-1319-MTS-IHS-W7E:** Fanless industrial-rugged Zone 2 19-inch 1000 nits LCD panel computer, multi point touch screen, IP66, dual core Atom D525 1.8 GHz CPU, -40 to 60°C operating temperature, with Intelligent Heating Solution (IHS) (available on request)

Each model is shipped with following standard items:

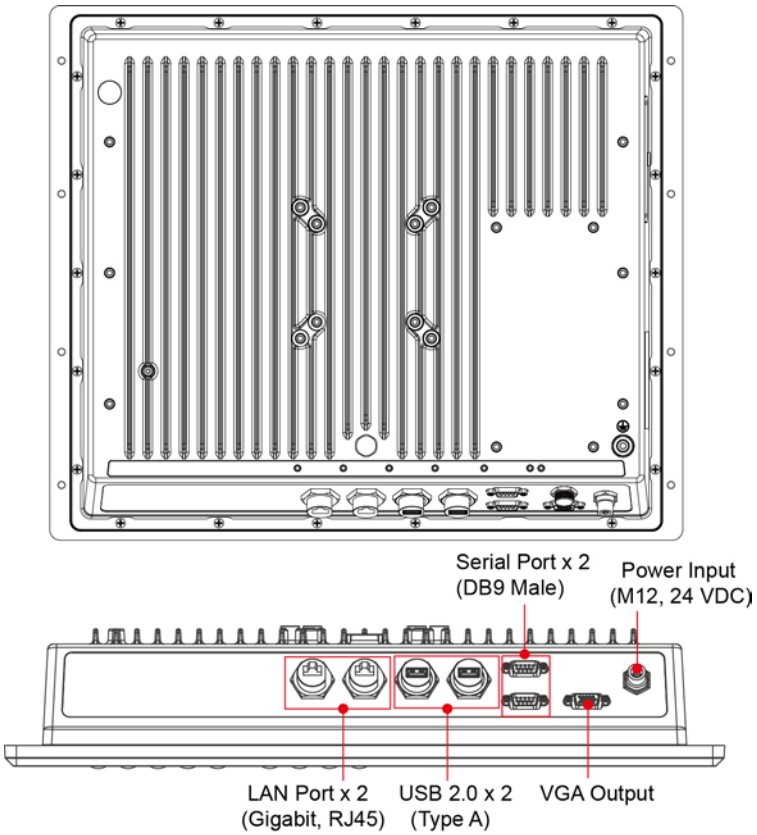
- 1 EXPC-1319 panel computer
- Quick Installation Guide
- Documentation & Software DVD
- Ethernet Cable: RJ45 to RJ45 cross-over cable, 100 cm
- Waterproof USB connector pack x 2
- Waterproof DB9 connector pack x 2
- Waterproof LAN connector pack x 2
- Waterproof power connector pack x 1
- Wall mounting kit
- Warranty statement

Appearance

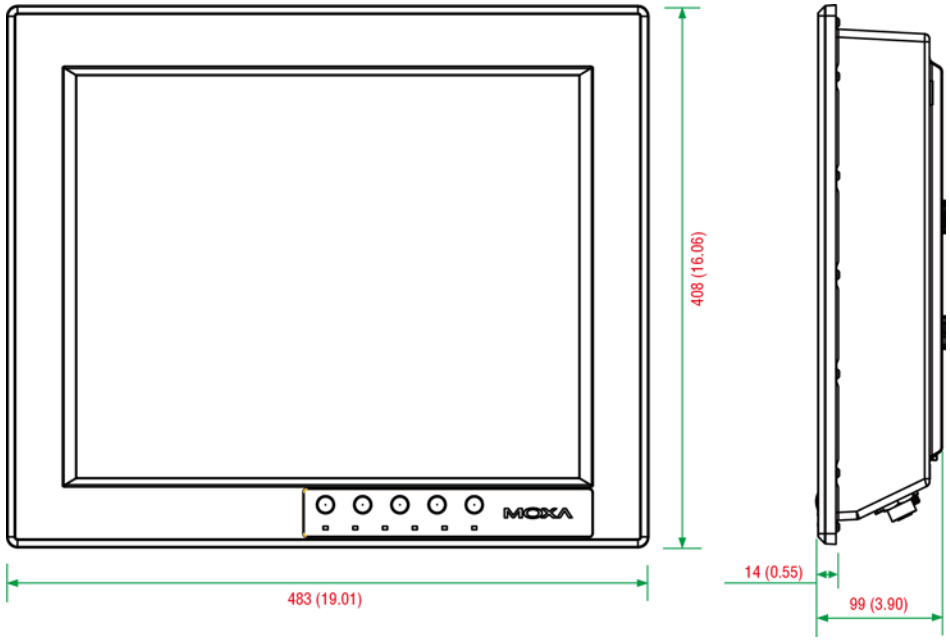
Front and Side Views



Rear and Bottom Views



Dimensions



Features

- Zone 2 certified component for panel mounting in hazardous area applications
- High performance dual core Intel Atom D525 1.8GHz platform with low power consumption
- 19-inch scratch-resistant anti-glare 1000 nits LCD panel
- Self-health diagnostics software package for remote predictive maintenance
- -40 to 60°C wide operating temperature (with built-in Intelligent Heater)
- Totally sealed IP66 / NEMA 4X panel computer (not for using in hazardous environments)
- Fanless, streamlined enclosure for highly efficient heat dissipation
- Touch screen control button to enable/disable touch screen
- Optional WLAN, 100M fiber optical interface

Hardware Specifications

Computer

CPU: Intel dual core Atom D525 1.8 GHz processor
OS: Windows 7 for embedded systems
System Chipset: Intel Pineview-D+ ICH8M
BIOS: 16-Mbit Flash BIOS SPI type with ACPI
Graphics Controller: Integrated Intel GMA3150 graphics controller
Video Output: VGA output, waterproof DB15 (female) connector
System Memory: 4 GB capacity, 2 GB pre-installed: 2 slots of 2 GB DDR3-800 SO-DIMM SDRAM
Automatic Reboot Trigger: Built-in software programmable watchdog timer for system resets, configurable from 1 to 255 second timeout intervals
Expansion Bus: 1 PCI-104 slot, 1 mini PCIe socket
USB: 2 USB 2.0 hosts, waterproof circular type A connector
KB/MS: PS/2 keyboard/mouse interface (Y-type cable) with waterproof connector (optional, not for using in hazardous environments)

Storage

Storage Expansion:
• On-board CompactFlash socket x 1
• One extra on-board SATA interface, supporting configurable RAID 0/1
Storage Support: Removable 32 GB industrial grade SSD (operating temperature: -40 to 85°C) to store OS, ; supports up to 256 GB

Display

Panel Size: 19-inch SXGA, 1000 nits LED backlit LCD
Aspect Ratio: 5:4
Response Time: 5 ms
Contrast Ratio: 1000:1
Viewing Angles:
• Horizontal: 170° (left to right)
• Vertical: 160° (up to down)
Max Colors: 16.7 M colors
Graphics Controller: Integrated Intel GMA3150 graphics controller
Video Output: VGA output, waterproof DB15 (female) connector
Resolution:
• VGA: 640 x 480
• SVGA: 800 x 600
• XGA: 1024 x 768
• SXGA: 1280 x 1024

Touch screen

EXPC-1319-STS: Resistive single point glass-film-glass
EXPC-1319-MTS: Capacitive multi point (available on request, not for using in hazardous environments)
Note: All EXPC-1319 touch screens are scratch resistant and anti-glare, suitable for use outdoors around heavy equipment.

Ethernet Interface

Hardware Interface: Waterproof RJ45 connector
LAN: 2 auto-sensing 10/100/1000 Mbps ports
Optical Fiber Interface: 2 multimode 100M fiber optic ports with waterproof Q-ODC connector (available on request)
WLAN: 1 802.11b/g/n interface (available on request)
Magnetic Isolation Protection: 1.5 kV built-in

Serial Interface

Serial Standards: 2 RS-232/422/485 ports, software-selectable
Connector Type: Waterproof DB9 (male)

Baudrate: Up to 38,400 bps

Isolation Protection: 2 kV

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485

Serial Signals

RS-232: TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND

RS-422: TxD+, TxD-, RxD+, RxD-, GND

RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND

RS-485-2w: Data+, Data-, GND

LEDs and Buttons

LEDs: Power (on/off), heater (on/off), storage (blinking/off), LAN port communication x 2 (on/off), fiber communication (reserved)

Control Buttons: System on/off, brightness adjustment x 2, touch screen on/off, programmable "Fn" button

Physical Characteristics

Housing: Aluminum

Weight:

• 10.7 kg (without Intelligent Heating Solution)

• 11.9 kg (with Intelligent Heating Solution)

Dimensions: 483 x 408 x 99 mm (19.02 x 16.06 x 3.90 in)

Mounting: Mounting holes for VESA 75/100, yoke mounting, and panel mounting

Environmental Limits

Operating Temperature:

• Without Intelligent Heating Solution: -20 to 60°C (-4 to 140°F)

• With Intelligent Heating Solution: -40 to 60°C (-40 to 140°F)

Storage Temperature: -40 to 80°C (-40 to 176°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

Anti-Vibration: 2 g rms, 5-500 Hz frequency, compliant with IEC 60068-2-6 standard

Anti-Shock: 20 g, half sine wave under system operating, 11 ms duration, compliant with IEC 60068-2-27 standard

Power Requirements

Input Voltage:

• Typical 24 VDC

• External 100 to 240 VAC isolated power supply unit (available on request, not for using in hazardous environments)

Connector: M12, customizable

Power Consumption:

• Without Intelligent Heating Solution: 60 W

• With Intelligent Heating Solution: 120 W

Standards and Certifications

Hazardous Environments: UL Class 1 Division 2, ATEX/IECEx Zone 2 certified component

EMC: EN 55022 Class B, EN 55024-4-2, EN 55024-4-3, EN 55024-4-4, FCC Part 15 Subpart B Class A

Mechanical: IP66, NEMA 4X

Green Product: RoHS, cRoHS, WEEE

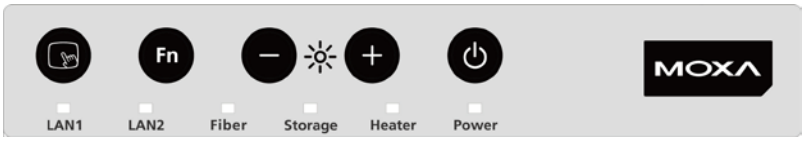
Warranty

Warranty Period: 3 years for computer system, 1 year for LCD panel

Details: See www.moxa.com/warranty

LED Indicators and Buttons

The EXPC-1319 comes with six LED indicators and five control buttons on the bottom of the front panel.



LED Indicators	Function	
Power	On	Power is on.
	Off	Power is off.
Heater	On	Heater is working. (Note that this function will be enabled when below -20°C)
	Off	Heater is not working.
Storage	Blinking	Storage (SSD or CF) is accessing.
	Off	Storage (SSD and CF) is not accessing.
Fiber	Reserved for optional function	
LAN1 & LAN 2	On	Network is transmitting or receiving data.
	Off	Network is not transmitting or receiving data.

Control Buttons	Function	
	Power	Press to turn on the computer. Press again to turn off the computer.
	Brightness	Press **+** button to increase the brightness of the panel. Press **–** button to decrease the brightness of the panel.
	Function	Customizable function key, can be configured by the utility. The default value will enable a virtual keyboard function. Refer to Software User's Manual for configuration details.
	Touch screen	Touch to enable the touch screen function (default). Touch again to disable.

LCD Panel and Touch screen

The EXPC-1319 comes with 1000 nits TFT LCD panel with touch screen bonding.

The 1000 nits TFT LCD panel means the panel's brightness at its central point is 1000 cd/m^2. Due to the characteristics of liquid crystal in TFT LCD panels, even though the EXPC-1319 will work properly between -20 and 60°C (-40 to 60°C with Intelligent Heating Solution), to extend the panel's life Moxa recommends maintaining the working temperature between 0 and 50°C whenever possible. Some areas on the LCD panel might distort some colors to black at extremely high temperatures, or respond sluggishly at extremely low temperatures.

The touch screen used on the EXPC-1319 includes hardened resistive glass-film-glass single point touch screen (STS) or a capacitive type multipoint touch screen (MTS). Different touch screen technologies allow different

light transmission rates to decrease the brightness of LCD panel. Usually the light transmission rate of resistive type touch screens is around 80%, while for capacitive types it is around 85% to 90%. Please note that the screen is composed of hardened, scratch-resistant glass, and its anti-glare coating can still be scratched using any abrasive with Mohs rating greater than 6. Please note that the capacitive type multipoint touch screen (MTS) model cannot be used in the hazardous environments.

Notice: Please calibrate your touch screen every time you reboot the system to ensure the touch screen works properly. To review touch screen calibration, please refer to the **Touch screen Calibration** section in Chapter 4 of the EXPC-1319 Windows Embedded Standard 7 User's Manual.

Moxa Intelligent Heating Solution

The EXPC-1319 may be ordered with Moxa's patented Intelligent Heating Solution, to extend the effective range of the platform's operating temperature, with the caveats below. EXPC-1319 computers equipped with IHS feature the heating solution on the display panel.

- The Intelligent Heating Solution will automatically initiate once the ambient temperature drops below -20°C.
- It takes about 40 to 50 minutes for the Intelligent Heating Solution to warm up the display panel. Once IHS has completed the heating cycle, the LED indicator for the **Heater** will turn off. Until the warming up cycle is completed, the display may be distorted or otherwise function poorly.
- Moxa Intelligent Heating Solution remains (minimally) powered up and operating even after the computer has been taken offline. This is to ensure its automated response when ambient temperatures drop below 0°C.
- IHS may only be turned off by disconnecting the power supply.
- IHS requires a 120 W power supply.

NOTE To ensure that the IHS has been completely stopped, make sure to remove the power source after shutting down the EXPC-1319.

2

Hardware Installation

The EXPC-1319 Series of panel computers are compact and rugged, making them suitable for any industrial application that requires EMC Level 4 compliance. The LED indicators allow users to monitor performance and identify trouble spots quickly, and multiple ports are provided for connecting a variety of different devices. The EXPC-1319 hardware platform is stable, reliable, and easy to maintain, allowing you to spend your time on application development rather than troubleshooting networking bugs. This chapter describes the hardware installation and interfaces of EXPC-1319 panel computers.

The following topics are covered in this chapter:

- **Placement Options**
  - Desktop
  - Mounting
  - Wall Mounting
- **Other Mounting Solutions**
  - Yoke Mounting
  - Panel Mounting
  - VESA Mounting
- **Wiring Requirements**
- **Connecting the Power Supply**
- **Connecting the Interfaces**
- **Connecting to a Display**
- **Connecting USB Devices**
- **Connecting Serial Devices**
- **Connecting LAN Ports**
- **Replacing the SSD**
- **Installing the CompactFlash Card**

Placement Options

ATTENTION!

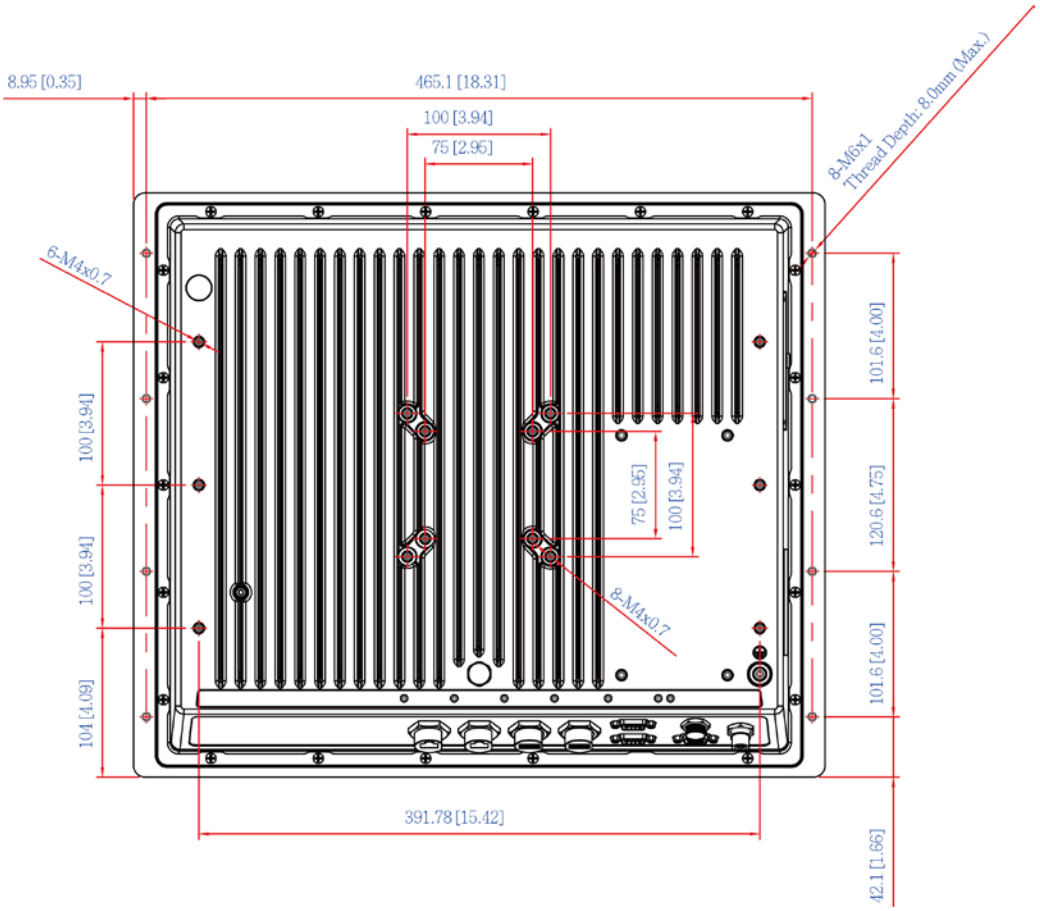
For maximum safety, at least two persons should work together to lift, place, and fasten the computer to its mounting point. Before you lift or move the computer, first verify both it and any power to the system is turned off. In addition, make sure you have prepared the correct screws for a wall mounting.

Desktop

Place your EXPC-1319 on a clean, flat, well-ventilated desktop. For better ventilation, leave some space between the EXPC-1319 and other equipment. Do not place equipment or objects on top of the EXPC-1319, as this might damage the computer's internal components.

Mounting

The EXPC-1319 comes with a variety of mounting methods for different field sites. Before mounting, refer to the following figure for the dimensions of the screw holes used for different mounting methods.



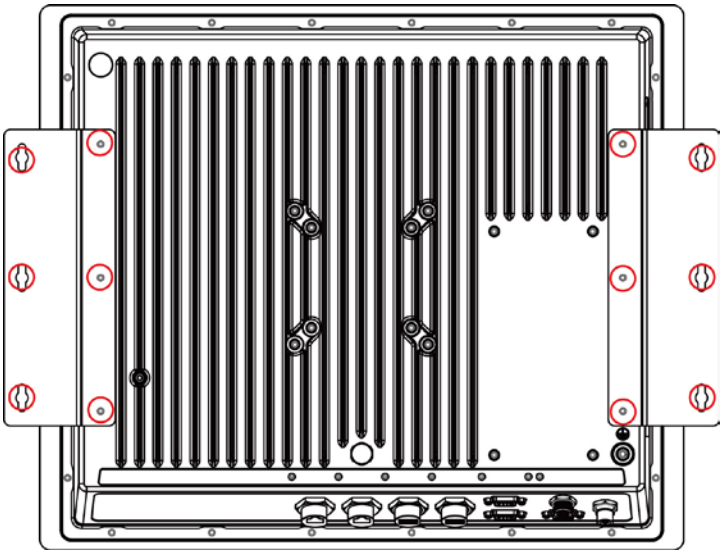
Wall Mounting

The EXPC-1319 comes with a wall mounting kit.

Follow these steps to mount the EXPC-1319 on a wall:

Step 1: Use screws to attach the mounting ears to the back of the computer. Each mounting ear requires three screws.

Step2: Fasten the computer to the wall using three screws per ear.



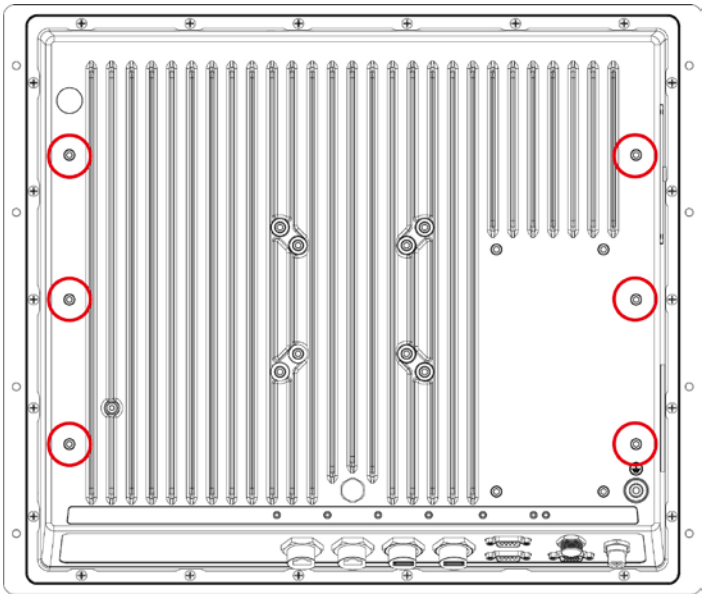
NOTE To make sure the panel computer will be securely installed on a wall, we suggest you to use **M5** screws of a suitable length to guarantee the computer remains securely fastened to the mounting point. The screw holes penetrate 8 mm into the computer's case. When choosing screws for installation, remember to account for the thickness of the mounting surface.

Other Mounting Solutions

The EXPC-1319 computers have reserved various mounting holes for users to mount the computer with different solutions, including yoke mounting, panel mounting, and VESA mounting. See the following section for detailed descriptions.

Yoke Mounting

The EXPC-1319 comes with six screw holes for a yoke mount. These screws holes are the same size as those for the wall mounting. Place the panel onto the mounting plate, fasten the computer using these holes.

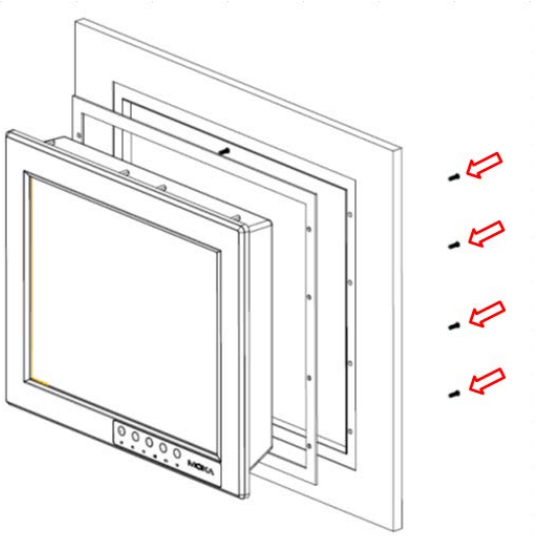


NOTE To make sure the panel computer will be securely installed on the yoke, use **M4** screws. The screw holes penetrate 8 mm into the computer's case. When choosing screws for installation, remember to account for the thickness of the mounting surface. Refer to **Appendix B: Statement of Regulatory Approval** for the technical details regarding regulation Class 1 Div. 2 devices.

Panel Mounting

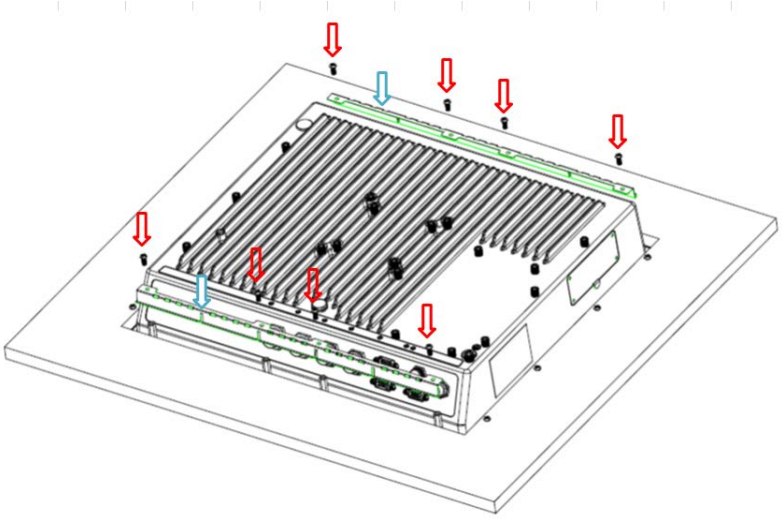
Follow these steps to install the EXPC-1319 on a panel cabinet.

1. Place the gasket between the EXPC-1319 and the enclosure, and use eight M6 screws to penetrate the enclosure and gasket, so that the gasket can be securely fasten on two sides of the panel mounting holes on the back of the EXPC-1319.



NOTE To make sure the panel computer will remain securely installed in the cabinet, use **M6** screws of a suitable length. The screw holes penetrate 6 mm into the computer's case. When choosing screws for installation, remember to account for the thickness of the mounting surface.

2. Install the mounting brackets from inner part of the computer, and use M4 screws to fasten the brackets. Four screws are required per side.

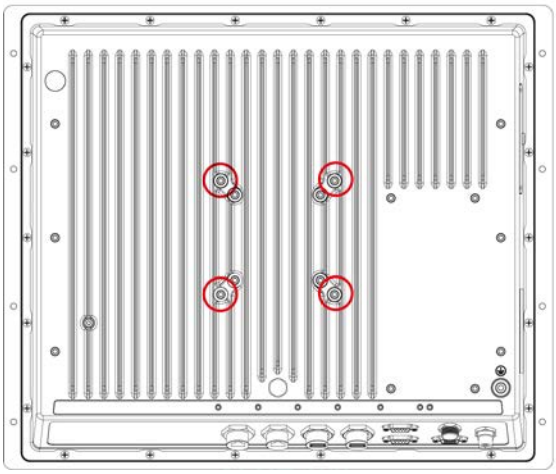


NOTE For the installation in hazardous environments, refer to **Explosion Hazard** section in **Appendix B**.

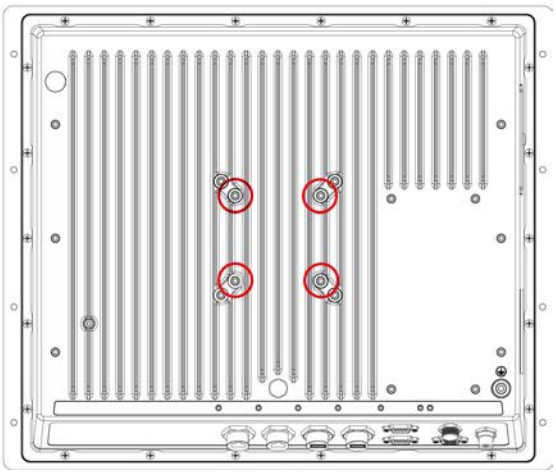
VESA Mounting

The EXPC-1319 comes with two sets of holes reserved for VESA mounts (FDMI): VESA 100 and VESA 75. Refer to the following figures for the specific locations of the VESA mounting screw holes.

VESA 100



VESA 75



NOTE To make sure the panel computer will be securely installed on a wall, we suggest you to use the screws with the specifications of **M4**. The screw holes penetrate 6 mm into the computer's case. When choosing screws for installation, remember to account for the thickness of the mounting surface. Refer to **Appendix B: Statement of Regulatory Approval** for the technical details regarding regulation Class 1 Div. 2 devices.

Wiring Requirements

The following common safety precautions should be observed before installing any electronic device:

- Strive to use separate, non-intersecting paths to route power and networking wires. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.
- Keep the wires separated according to interface. The rule of thumb is that wiring that shares similar electrical characteristics may be bundled together.
- Do not bundle input wiring with output wiring. Keep them separate.
- When necessary, it is strongly advised that you label wiring to all devices in the system.

ATTENTION

Do not run signal or communication wiring and power wiring in the same conduit. To avoid interference, wires with different signal characteristics (i.e., different interfaces) should be routed separately.

ATTENTION

Safety First!

Be sure to disconnect the power cord before installing and/or wiring your device.

Caution! High Electrical Current!

Verify the maximum possible current for each wire gauge, especially for the power cords. Observe all electrical codes dictating the maximum current allowable for each wire gauge.

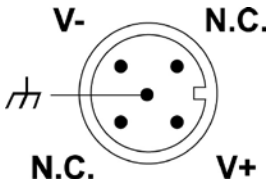
If the current goes above the maximum ratings (120 W), the wiring could overheat, causing serious damage to your equipment.

Caution! High Temperatures!

Be careful when handling the unit. When the unit is plugged in, the internal components generate a lot of heat which may leave the outer casing too hot to touch.

Connecting the Power Supply

The power connector is located at the far left of the bottom panel. When wiring the machine for power, refer to the following figure for the pinout of the M12 power connector. Please take care to guarantee your power cable uses the correct pinout.



When power has been connected, press the power button on the front panel to turn on the computer.

Connecting the Interfaces

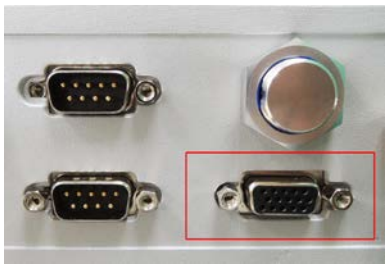
The EXPC-1319 comes with various interfaces located on the bottom panel. All of these connectors have been shipped with protective caps and tethers. If you wish to detach the tethers from the computer the screws securing them to the rear panel will need to be removed. To keep water out of the enclosure and preserve the life of the EXPC-1319, leave the protective caps in place (with their tethers) whenever the hardware interfaces are not used.

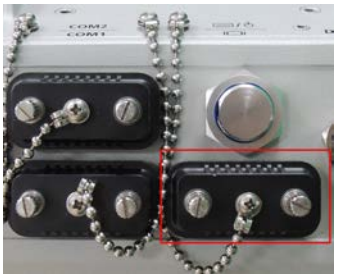
Connecting to a Display

The EXPC-1319 comes with a 19-inch LED-backlit LCD display. Because the configuration of a 2nd or alternate display may be required, the EXPC-1319 also comes with a VGA interface on its bottom panel. The VGA hardware interface is a standard D-Sub 15-pin female connector; to ensure that the monitor image remains clear, be sure to tighten the monitor cable after connecting it to the EXPC-1319 computer. The pin assignments are shown below.

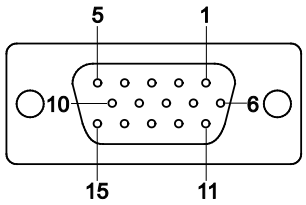
WARNING

When the external VGA display is not in use, make sure that the protective cap and the tether tail have been securely fastened so that the waterproof function can work well. Please note that when reinstalling the protective cap, it must be **fully tightened** to insure the unit is sealed correctly to meet the IP66 enclosure rating. You may refer to **Appendix B: Statement of Regulatory Approval** for the technical details regarding regulation Class 1 Div. 2 devices.





DB-15 Female VGA Connector

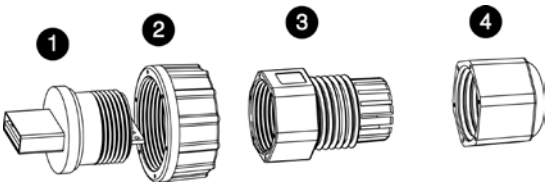


Pin No.	Signal Definition	Pin No.	Signal Definition
1	Red	9	VCC
2	Green	10	GND
3	Blue	11	NC
4	NC	12	DDC2B Data
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	DDC2B Clock
8	GND		

Connecting USB Devices

The EXPC-1319 embedded computer has two USB 2.0 ports on the bottom panel. All of the ports are UHCI, Rev 2.0 compliant and support Plug & Play and hot swapping. These ports can be used to connect USB devices such as a keyboard, mouse, USB flash disk, and USB CD-ROM. In addition, both USB ports support system boot up, which can be activated by modifying the BIOS settings. BIOS configuration is described in detail in **Chapter 4: BIOS Setup**. Follow the steps below to wire up the USB connectors.

Step 1: Disassemble the waterproof USB connector into four parts. Thread the end of the wire you intend to connect through parts 4, 3, and 2, in that order.



Step 2: Connect the wires to the USB head according to the pinout shown in the table below.

Step 3: When finished, assemble the USB parts, and connect the USB connector on the bottom panel of the EXPC-1319. Make sure the connector

has been securely fastened to ensure the waterproof function.

Pin Number	Assignment
1	VCC
2	DATA-
3	DATA+
4	Ground

WARNING

To keep the EXPC-1319 within the IP66 rating's waterproof specifications, when the USB ports are not in use operators must replace the protective caps and the tethers, and make sure they have been properly fastened. Please note that when reinstalling the protective caps they must be tightened to **136 N-cm (12 in-lbs)** to ensure the unit is sealed to IP66 specifications.

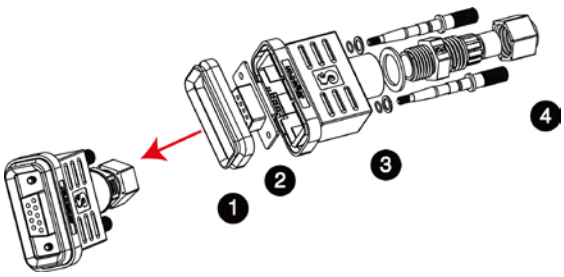
In addition, because of the danger posed by the maximum 5V @ 500 mA power supply of standard USB ports, care must be taken to protect the EXPC-1319 from power accidents in damp environments. To guarantee safety from severe electrical shoks or electrocution, in damp conditions users should disconnect the entire computer from its power source before connecting or disconnecting any USB devices.

You may refer to **Appendix B: Statement of Regulatory Approval** for the technical details regarding regulation Class 1 Div. 2 devices.

Connecting Serial Devices

The EXPC-1319 comes with two RS-232/422/485 serial ports with DB9 male connector.

Step 1: Disassemble the waterproof DB9 connector into four parts.

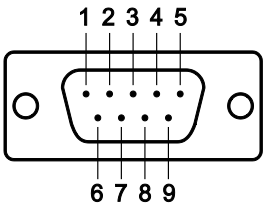


Step 2: Connect the serial signal wires with the correct pin definition. See the following figure and table.

Step 3: When finished, assemble the DB connector parts, and connect to the DB9 connector on the bottom panel of the EXPC-1319. Make sure the connector has been securely fastened to ensure the waterproof function.

The pin assignments for RS-232/422/485 serial ports are shown in the following table:

DB-9 Male Port

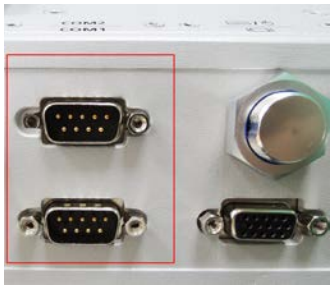


RS-232/422/485 Pinouts

Pin	RS-232	RS-422	RS-485-4W	RS-485-2W
1	DCD	TxDA(-)	TxDA(-)	–
2	RxD	TxDB(+)	TxDB(+)	–
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–

WARNING

When the serial ports are not in use, make sure that the protective caps and the tethers have been securely fastened to keep water from entering the enclosure. Please note that when reinstalling the protective caps the screws which keep them in place must be tightened to **136 N-cm (12 in-lbs)** to ensure the unit is sealed to IP66 specifications. You may refer to **Appendix B: Statement of Regulatory Approval** for the technical details regarding regulation Class 1 Div. 2 devices.

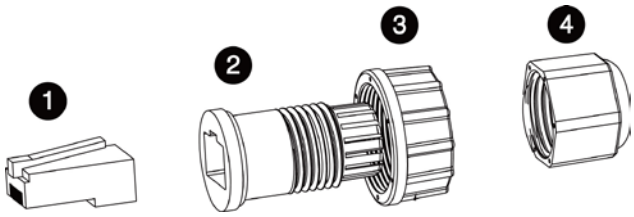


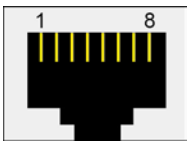
Connecting LAN Ports

The EXPC-1319 has two 10/100/1000 Mbps LAN ports. These LAN ports come with waterproof RJ45 connectors. Follow the steps below to connect the LAN ports.

By default, the LAN ports use DHCP addressing to assign network IP addresses. For detailed network configuration, please refer to the **EXPC-1319 Win 7 Embedded Software Manual**.

Step 1: Disassemble the waterproof RJ45 LAN connector into four parts.
Step 2: Users need to connect the twisted pair wire to the correct pinouts. For pinouts, refer to the figure and table just below.
Step 3: Pass LAN twisted pair through parts 4, 3, and 2, in that order, then connect it to the RJ45 head. When finished, reassemble the LAN parts, and insert the RJ45 head into the bottom panel of the EXPC-1319. Make sure the connector is securely fastened to ensure full water resistance.





Pin No.	100 Mbps Signal	1000 Mbps Signal
1	ETx+	TRD (0)+
2	ETx-	TRD (0)-
3	ERx+	TRD (1)+
4	--	TRD (2)+
5	--	TRD (2)-
6	ERx-	TRD (1)-
7	--	TRD (3)+
8	--	TRD (3)-

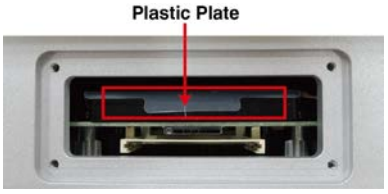
WARNING

When the Ethernet LAN ports are not in use, make sure that the protective caps and tethers have been securely fastened to keep water from entering the enclosure. Please note that when reinstalling the protective caps they must be tightened to **136 N-cm (12 in-lbs)** to ensure the unit is sealed to IP66 specifications. You may refer to **Appendix B: Statement of Regulatory Approval** for the technical details regarding regulation Class 1 Div. 2 devices.

Replacing the SSD

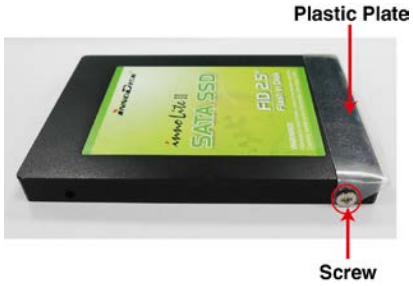
The EXPC-1319 comes with a removable 32 GB industrial SSD that can be upgraded to a maximum of 256 GB. To replace the SSD, follow these steps.

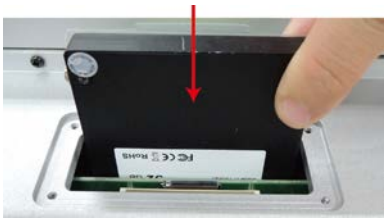
1. Remove the SSD cover, located on the left side of the computer (shown at right).



2. Remove the SSD by pulling out the plastic plate (shown at left).

3. Remove the screws on two sides of the SSD, and then remove the plastic plate.





4. Place the plastic plate on the new SSD, and fasten the screws on two sides of the SSD. When finished, insert the SSD into the socket (shown at left)

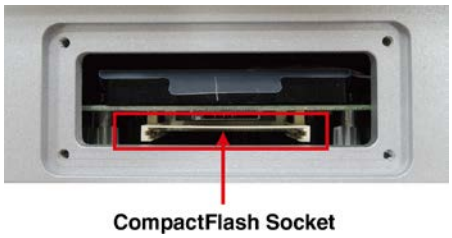
5. Set the SSD cover in place and fasten it using the original four screws.

NOTE Please note that the operating system is stored on the SSD. If you replace this SSD with a new model you will may perform a system recovery procedure to re-install the operating system on the new SSD. For details about this procedure, please refer to the **System Recovery** chapter in either the **EXPC-1319 Win 7 Embedded** (Chapter 9), or **EXPC-1319 Win Linux** (Chapter 5) software manuals**,**.

Installing the CompactFlash Card

The EXPC-1319 comes with an onboard CompactFlash socket located just beside the SSD socket. Follow these steps to install.

1. Remove the SSD cover, located on the left side of the computer (shown at right).



2. The CompactFlash socket is located beside the SSD socket (shown at left).

3. Carefully insert the CompactFlash card into the socket, hardware interface first (shown at right). To remove the card, you may need to use a screwdriver or other long, slender tool.

4. When finished, place the cover back and fasten the screws.

NOTE

Please note that the SSD/CompactFlash cover comes with rubber pads fastened to the back plate, to help secure the SSD and CF cards. These pads also help reduce vibration and assist in keeping the SSD and CF slots waterproof, so take care to preserve them and follow suggested procedures when securing the cover.

3

Touch Screen Calibration

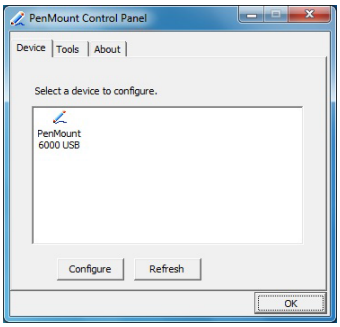
- **Calibrating the Touch Screen**
  - Standard Calibration
  - Advanced Calibration
- **PenMount Calibration Utility Parameters**
  - Turn off EEPROM Storage
  - Touch Screen Cursor Settings
  - Edge Compensation

Calibrating the Touch Screen

This chapter describes the calibration process for the EXPC-1319 touch panel.

First, Open the PenMount control panel. This may be found under the **Windows 7 Start Menu**, in the **Programs** list in the **PenMount Windows Universal Driver(WHQL)** folder. From the PenMount folder, navigate to the **Utility** folder and open the **PenMount Control Panel.**

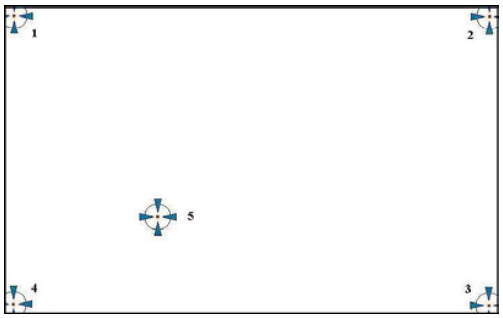
Next, the **PenMount Control Panel** should appear as in the screen shot to the right, with the **Device** tab as its default display. Double-click on the device you want to calibrate, or select the device and click **Configure**. If you do not see your device offered on the menu, click **Refresh** to refresh the list.



The final preparatory step is to choose what sort of calibration you want. Most will choose **Standard Calibration**, which is a basic touch screen calibration using five reference points. For most situations, a standard calibration should be adequate. As the touch screen ages, users will find that the standard calibration is not adequate for re-establishing screen accuracy and precision. If problems are still encountered following a standard calibration, you may choose **Advanced Calibration** to calibrate the touch screen to a greater number of reference points.

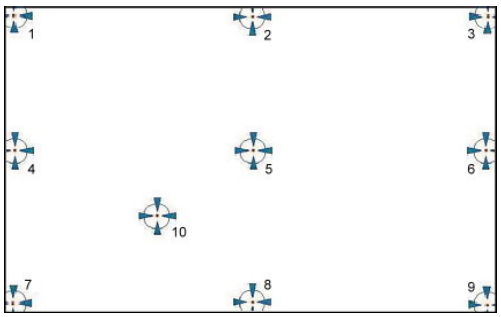
Standard Calibration

For a standard five point calibration, five spots will appear one after another on the display. Use your finger or stylus to touch the five points in order. After you have completed the sequence, hit **ESC** on your keyboard to save the result and exit the calibration process.



Advanced Calibration

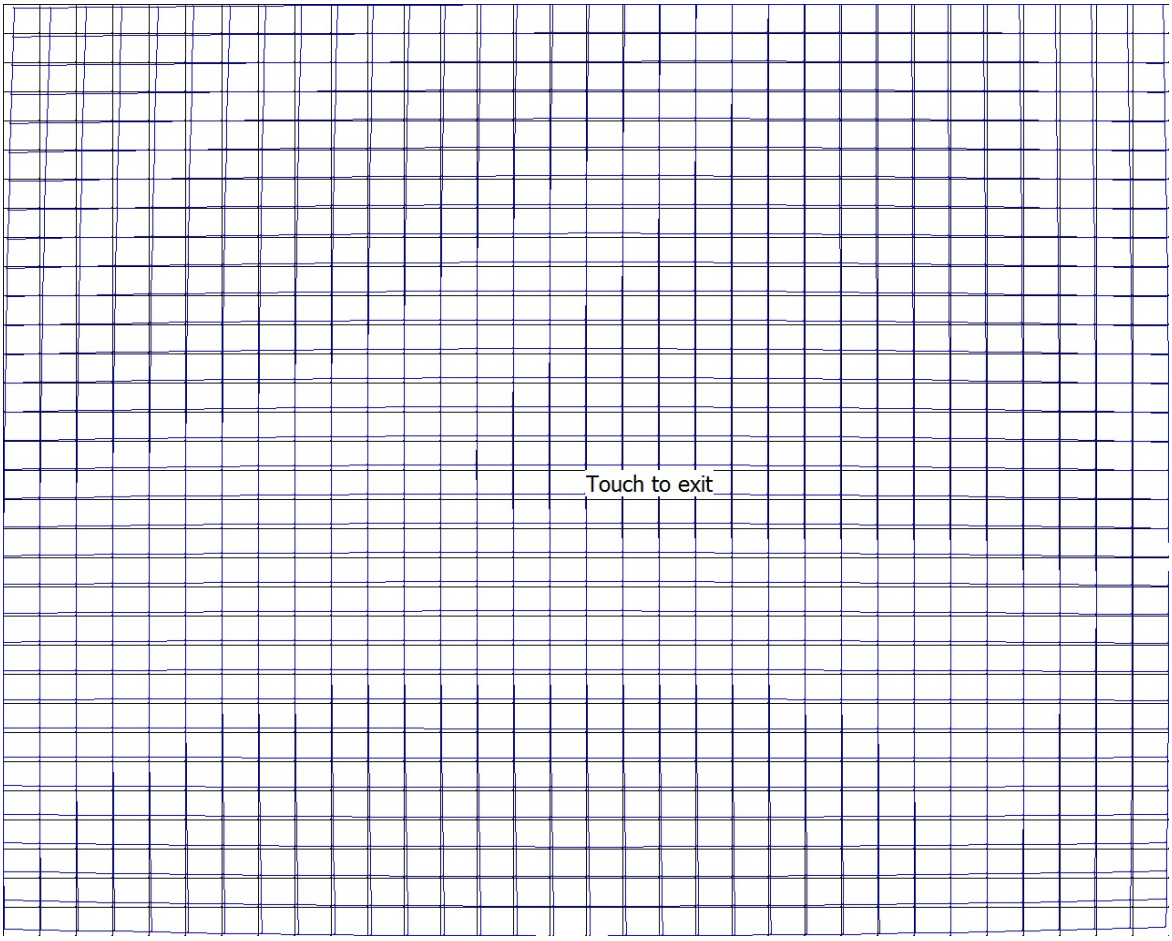
An advanced calibration uses 9, 16, or 25 points to calibrate touch panel linearity; select the number of reference points from the drop-down menu offered on the calibration utility main dialog. You may also instruct the calibration utility to plot detailed calibration data onto a graph. For more information about the data graph, see the next section, **Calibration Data Graph**.



Just as with the standard calibration, to complete the calibration use your finger or stylus to touch the points in order, as they appear. After you have completed the sequence, hit **ESC** on your keyboard to save the result and exit the calibration process.

Advanced Calibration: Calibration Data Graph

If you performed an advanced calibration and ticked the **Plot Calibration Data** selection, then after you complete an advanced calibration the calibration utility will provide you with a graph comparing ideal panel linearity as assumed by the PenMount utility (the black lines) plotted against the approximate linearity derived by the PenMount utility from the user calibration process (the blue lines).



Please note that this function is mainly used by the panel manufacturer for troubleshooting. To exit the graph, simply touch the screen. If you feel you have discovered problems with calibration that you cannot solve using the PenMount calibration utility, please contact Moxa's Embedded Computing Technical Support staff.

PenMount Calibration Utility Parameters

Turn off EEPROM Storage

Ticking this box disables the storage of calibration data in the permanent EEPROM screen controller; instead, the calibration data is saved to the system drive. If you turn off EEPROM storage, the value will be stored and available from one restart to the next, but the changes will be lost should you perform a system software recovery, forcing you perform a touch panel recalibration.

Touch Screen Cursor Settings

The **Settings** tab allows for configuration of four main touch screen cursor features: cursor behavior (mouse emulation or stylus mode), a beep that sounds when contact with the touch screen is made or broken, a cursor stabilizer, and press-and-hold in place of right clicking.
The top drop-down may only be set to **mouse emulation**. No other modes are available.

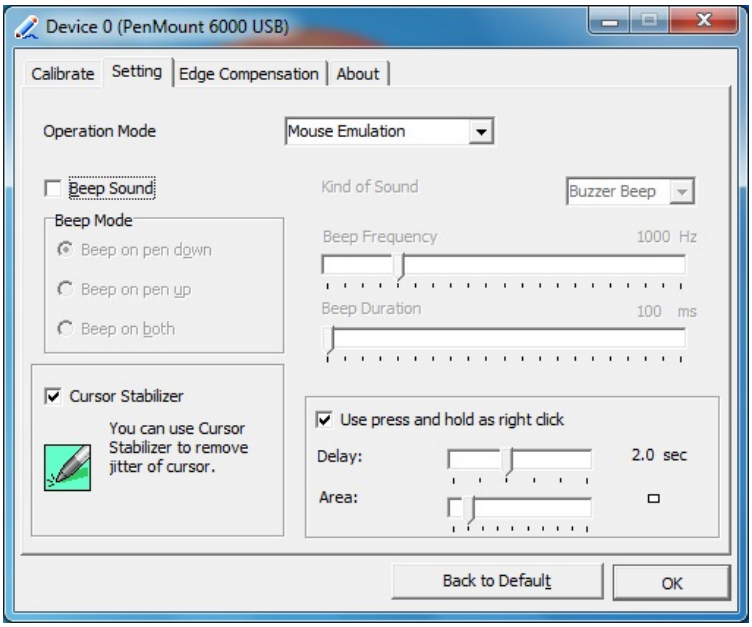
Beep mode allows you to configure a beeping sound to play whenever contact is made (or broken) with the screen. The beep may be configured for tone, frequency, and duration.

The **cursor stabilizer** removes jitter from the cursor when the computer is being used in high vibration environments.

To enable **right-click capability** for the touch screen, users may enable the **press-and-hold-as-right-click**, which allows users to press on the cursor and hold their finger in place, without moving, to call up the right-click menu available in most Windows applications.

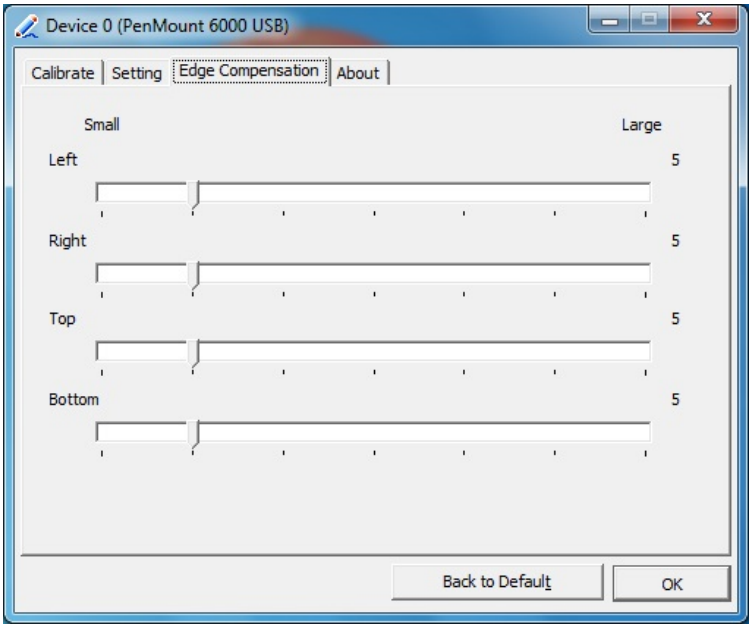
Back to defaults resets all of the touch screen interface settings to their factory defaults.

When finished, click **OK**.



Edge Compensation

This page allows users to calibrate the touch screen so that software features at the edges of the display are easier to access. This is often a serious problem when, for instance, users are touching the screen with fingertips that are too thick to conveniently access scroll bars, or to manipulate objects on the Windows task bar, or in the system tray located on the bottom of the screen. The edge compensation interface consists of four sliders one for each edge of the screen. The far right represents the largest possible edge area, while the far left represents the smallest possible (unmagnified) edge area.



4

BIOS Setup

This chapter describes the BIOS settings of the EXPC-1319 computer. The BIOS is a set of input/output control routines for peripherals. The BIOS is used to initialize basic peripherals and loads the operating system. The BIOS setup allows the user to modify the system configurations of these basic input/output peripherals. All of the configurations will be stored in the NVRAM (flash memory), which retains the system information after system reboots or the power is removed.

The following topics are covered in this chapter:

- **Entering the BIOS Setup Utility**
- **BIOS Main Page**
- **Modifying BIOS Settings**
  - Advanced Settings
  - Security Settings
  - Power Settings
  - Boot Settings
  - Exit Settings
- **Upgrading the BIOS**

Entering the BIOS Setup Utility

Before you start configuring BIOS settings, make sure the following notices have been confirmed.

1. The EXPC-1319 has been installed in the safe environment, such as office or lab.
2. The keyboard has been successfully connected.
3. The power cable has been successfully connected.

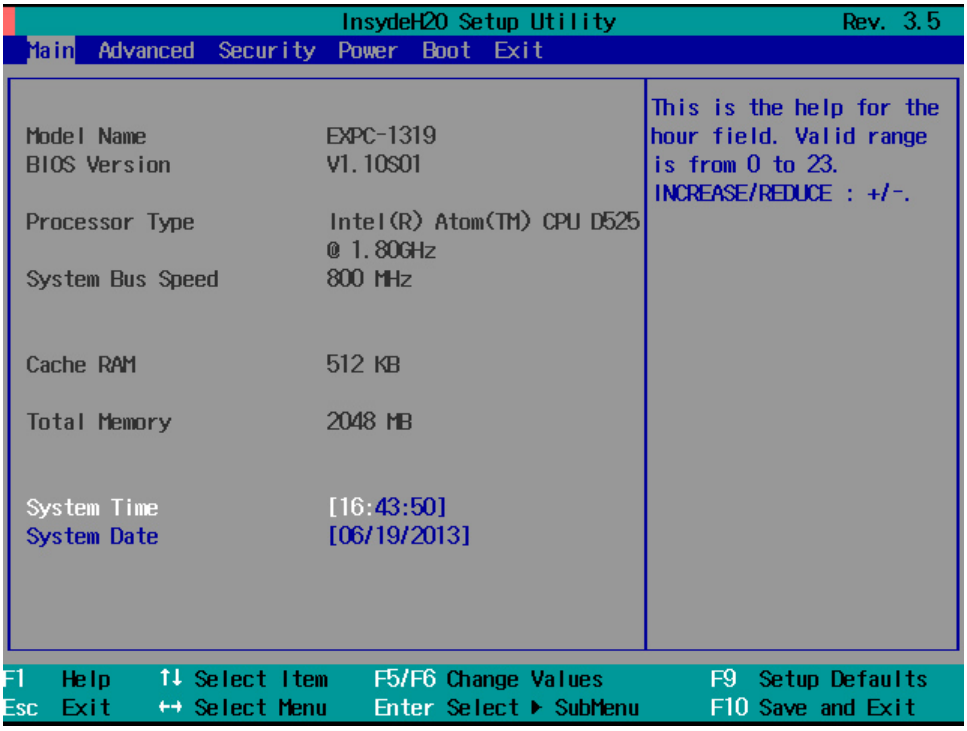
To enter the BIOS setup utility, press the “F2” key while the system is booting up. The main BIOS Setup screen will appear.

A basic description of each function key is listed at the bottom of the screen. Refer to these descriptions to learn how to use them.

F1: General Help	**↑ ↓: Select Item**
F5/F6: Change Values (in a drop down menu)	**← →: Select Menu**
F9: Setup Defaults	**ESC: Exit**
F10: Save and Exit	**ENTER: Select or go to Submenu**

BIOS Main Page

The main page of the BIOS displays basic low-level information about system hardware, including things like model names, CPU type, and BIOS version.

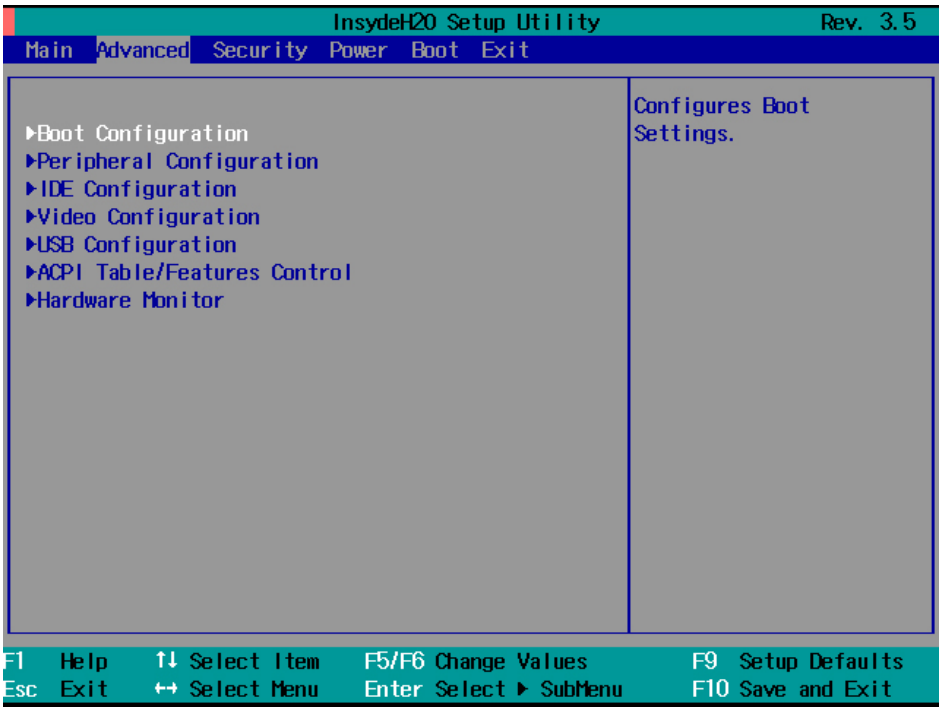

InsydeH20 Setup Utility Rev. 3.5
Main Advanced Security Power Boot Exit
Model Name EXPC-1319
BIOS Version V1.10S01
Processor Type Intel(R) Atom(TM) CPU D525 @ 1.80GHz
System Bus Speed 800 MHz
Cache RAM 512 KB
Total Memory 2048 MB
System Time [16:43:50]
System Date [06/19/2013]
This is the help for the hour field. Valid range is from 0 to 23. INCREASE/REDUCE : +/-.
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▶ SubMenu F10 Save and Exit

Modifying BIOS Settings

Navigate the BIOS menus using the arrow keys; up (↑) and down (↓) arrows navigate the menu, while left (←) and right (→) arrows will open or close sub-menus from entries marked with a triangle (▲) at the beginning of the line.

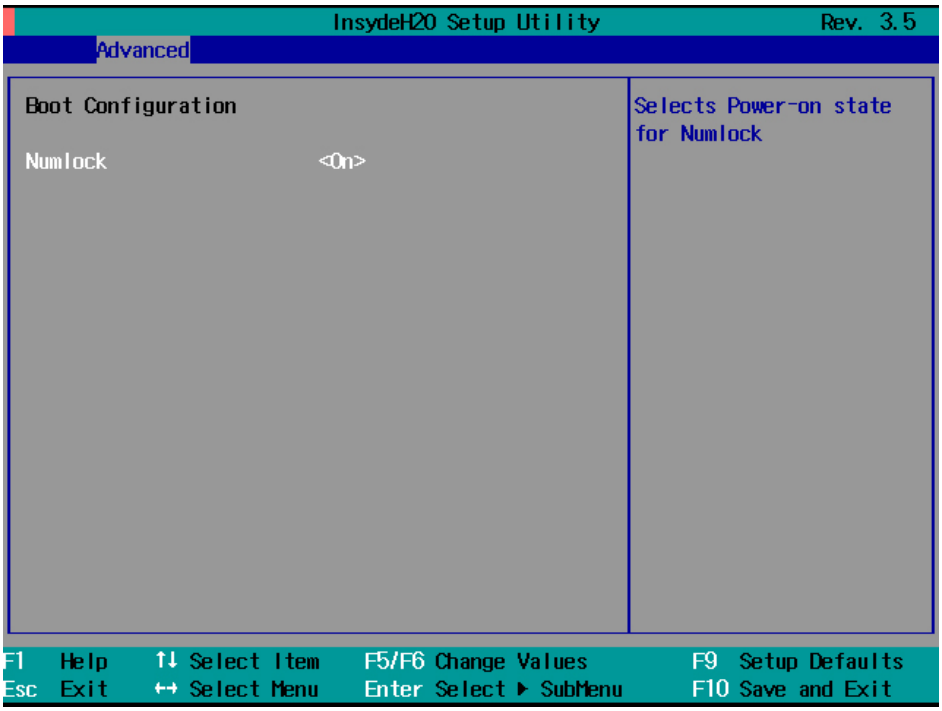
Advanced Settings

The **Advanced Features** screen will appear when choosing the **Advanced** item from the main menu.


InsydeH20 Setup Utility Rev. 3.5
Main Advanced Security Power Boot Exit
▸Boot Configuration
▸Peripheral Configuration
▸IDE Configuration
▸Video Configuration
▸USB Configuration
▸ACPI Table/Features Control
▸Hardware Monitor
Configures Boot Settings.
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ SubMenu F10 Save and Exit

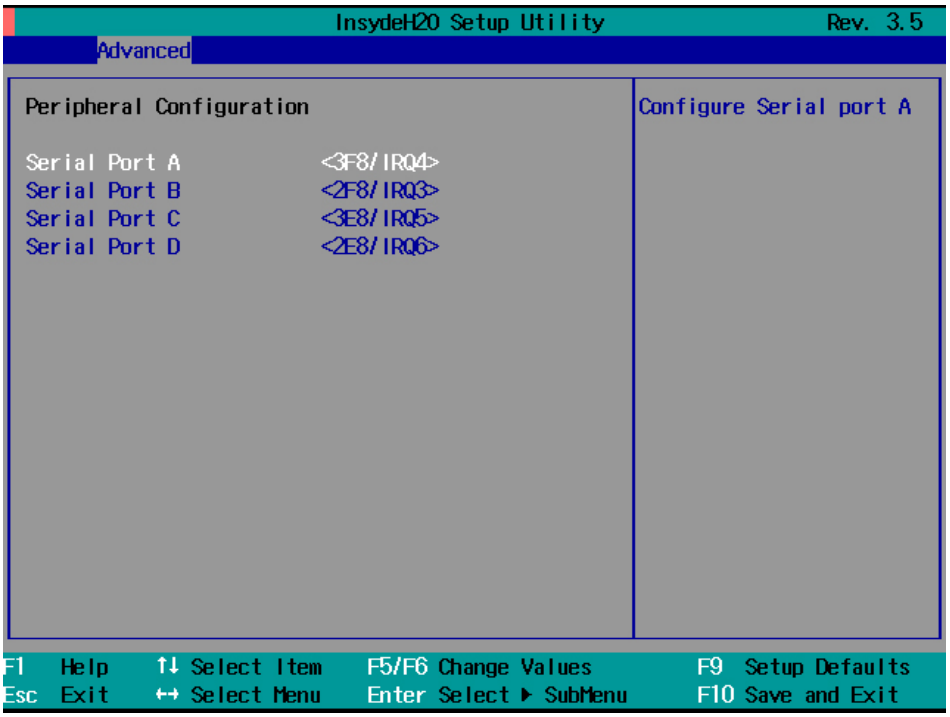
Boot Configuration

This item allows users to toggle the number pad into “on” or “off” when first booting up.


InsydeH20 Setup Utility Rev. 3.5
Advanced
Boot Configuration
Numlock <On>
Selects Power-on state for Numlock
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ SubMenu F10 Save and Exit

Peripheral Configuration

This item allows you to configure the peripheral serial ports.



Serial Port A

This item allows you to configure the COM1 port.

Options: 3F8/IRQ4 (default), Disabled

Serial Port B

This item allows you to configure the COM2 port.

Options: 2F8/IRQ3 (default), Disabled

Serial Port C

This item allows you to configure the control buttons.

Options: 3E8/IRQ5 (default), Disabled

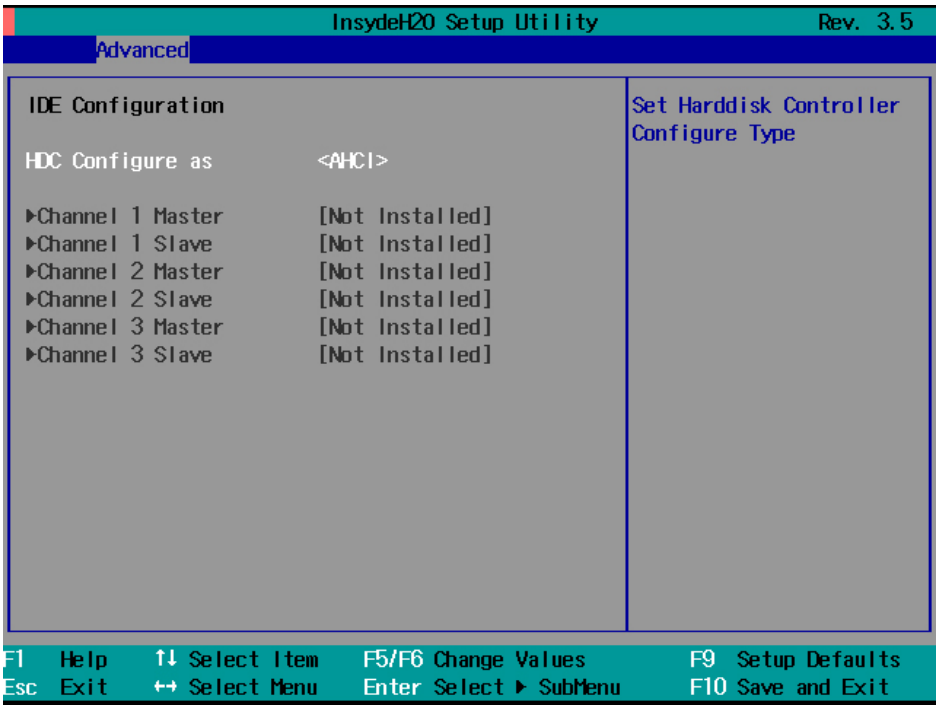
Serial Port D

This item is reserved to configure the touch panel interface.

Options: 3E8/IRQ5 (default), Disabled

IDE Configuration

This item allows you to configure the storage drive controllers.


InsydeH20 Setup Utility Rev. 3.5
Advanced
IDE Configuration
Set Harddisk Controller Configure Type
HDC Configure as <AHCI>
▸Channel 1 Master [Not Installed]
▸Channel 1 Slave [Not Installed]
▸Channel 2 Master [Not Installed]
▸Channel 2 Slave [Not Installed]
▸Channel 3 Master [Not Installed]
▸Channel 3 Slave [Not Installed]
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ SubMenu F10 Save and Exit

HDC Configure As

This item allows you to configure the storage drive type. The options are:

AHCI (default); **PATA**; **SATA**; and **IDE Non-Combined**

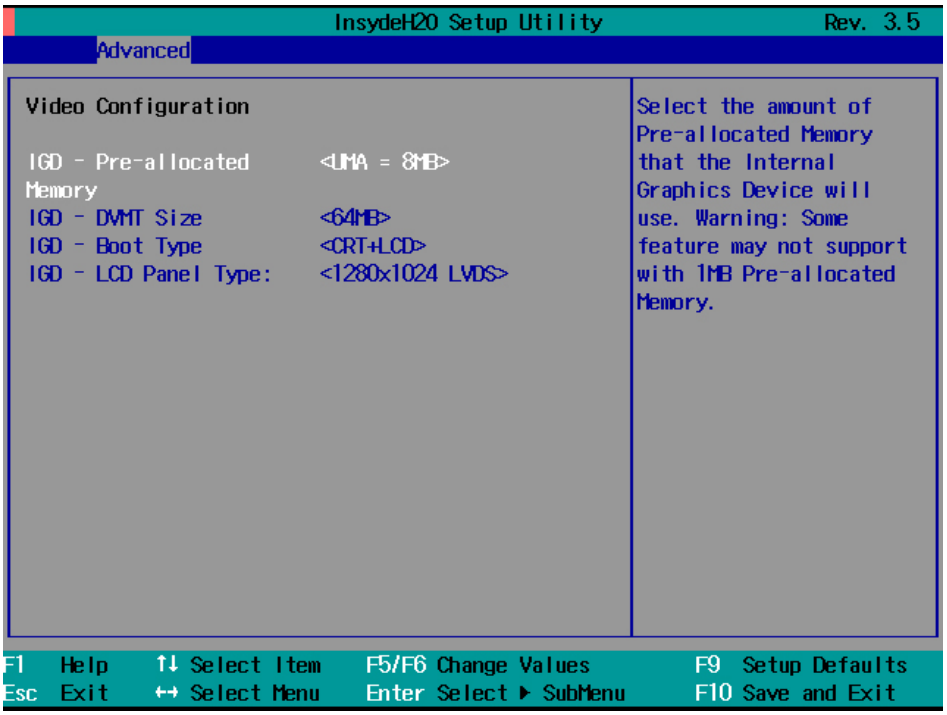
Channel Master 1 to 3

This setting displays the storage devices installed on the computer's master bus. These storage devices may be HDD, SSD, or a CF card.

Channel Slave 1 to 3

This setting displays storage devices installed on the computer's slave bus. These storage drives may be HDD, SSD, or a CF card.Video Configuration

This item allows you to configure the video settings.


InsydeH20 Setup Utility Rev. 3.5
Advanced
Video Configuration
IGD - Pre-allocated Memory <UMA = 8MB>
IGD - DVMT Size <64MB>
IGD - Boot Type <CRT+LCD>
IGD - LCD Panel Type: <1280x1024 LVDS>
Select the amount of Pre-allocated Memory that the Internal Graphics Device will use. Warning: Some feature may not support with 1MB Pre-allocated Memory.
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▶ SubMenu F10 Save and Exit

IGD – Pre-Allocated

This item allows you to configure the pre-allocated capacity for the graphic memory capacity.

Options: 8 MB (default), 1 MB

IGD – DVMT Size

This item allows you to configure the capacity of the DVMT 5.0 used by the internal graphics device.

Options: 64 MB (default) , 128 MB, 224 MB

IGD – Boot Type

This item allows you to select the video device which will be activated during POST.

Options: CRT+LCD (default), CRT, LCD

Please note that for the EXPC-1319, the LCD features the LCD panel, and the CRT features the VGA port at the bottom of the computer.

IGD – LCD Panel Type

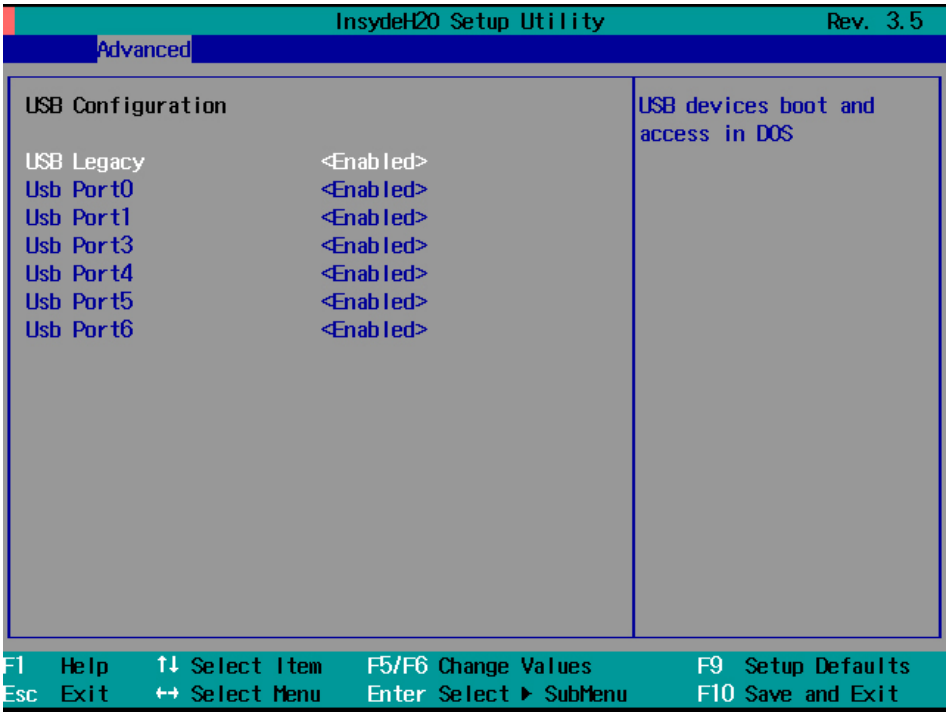
This item allows you to select the LCD panel type and the resolution.

Options: 1280x1024 LVDS (default), 1024x768 LVDS, 800x600

LVDSUSB Configuration

This item allows you to turn **USB Legacy** mode on or off. **USB Legacy** allows older USB devices to be accessed from the earliest boot initialization, and/or DOS.

Options: Enabled (default), Disabled



USB Port0

This item allows you to configure the USB Port 1.

Options: Enabled (default), Disabled

USB Port1

This item allows you to configure the USB Port 2.

Options: Enabled (default), Disabled

USB Port3-Port6

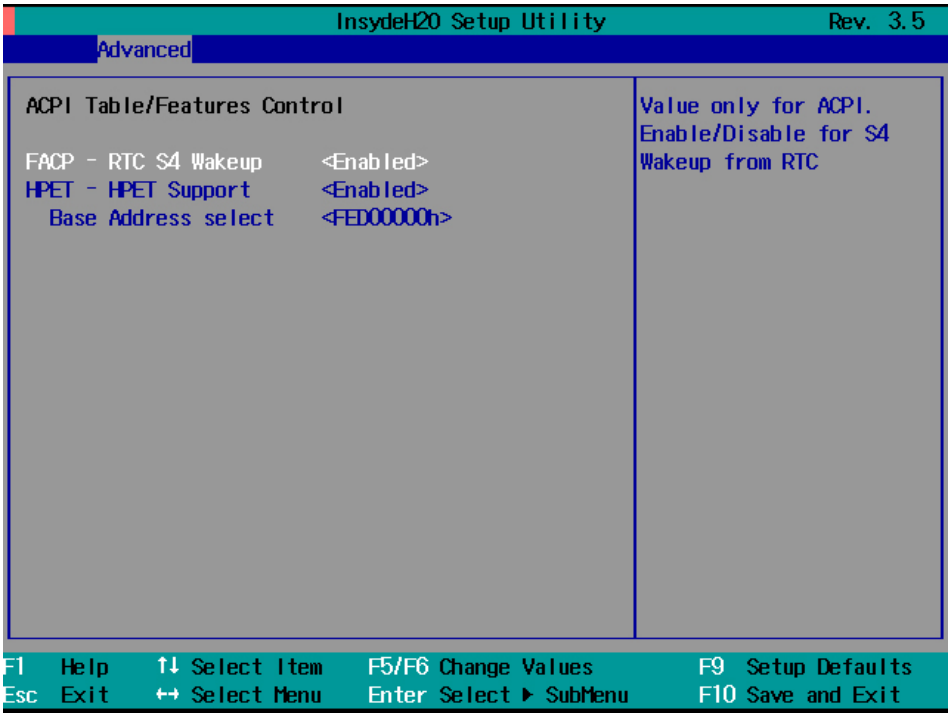
This item allows you to configure the USB Port 3 to 6. These ports are reserved on the main board.

Options: Enabled (default), Disabled

Note: Please note that USB Port 2 is reserved for touch panel function. Default value is Enabled.

ACPI Table/Features Control

This item allows you to configure FACP and HPET functions.


InsydeH20 Setup Utility Rev. 3.5
Advanced
ACPI Table/Features Control
FACP - RTC S4 Wakeup <Enabled>
HPET - HPET Support <Enabled>
Base Address select <FED00000h>
Value only for ACPI.
Enable/Disable for S4
Wakeup from RTC
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▶ SubMenu F10 Save and Exit

FACP – RTC S4 Wakeup

This item allows you to enable RTC wakeup, so the computer may pull itself out of sleep or hibernation mode to perform specified tasks at a certain time each day.

Options: Enabled (default), Disabled

HPET – HPET Support

This item allows you to enable/disable the HPET (High Precision Event Timer), which produces periodic interrupts at a much higher resolution than the RTC and may be used to synchronize multimedia streams. HPET can sometimes introduce system instability, so some users may wish to disable it.

Option: Enabled (default), Disabled

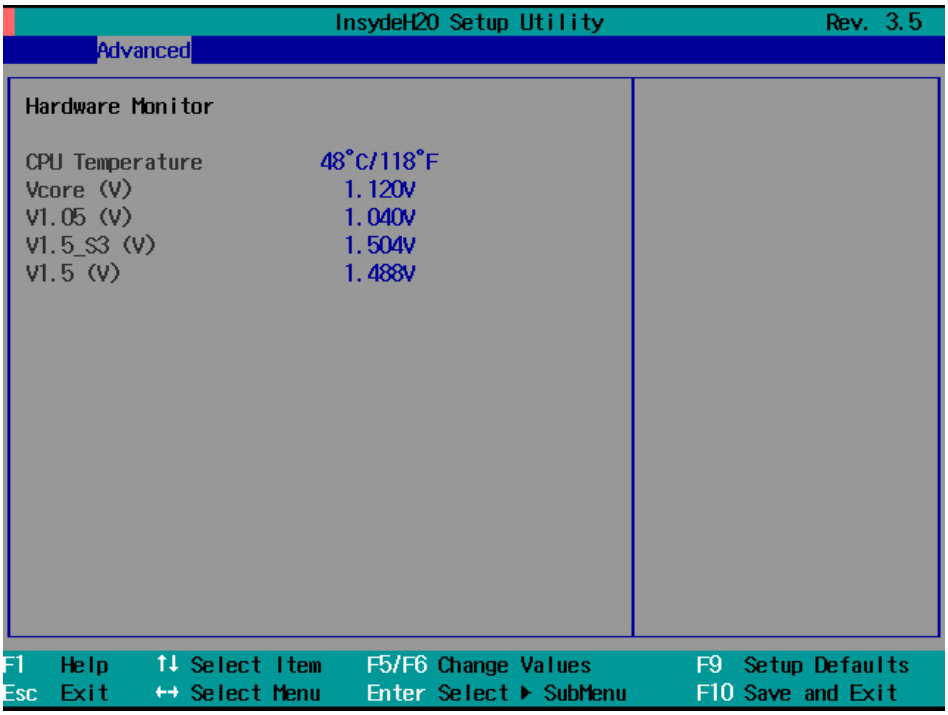
Base Address Select

This allows you to select the memory address range for the HPET.

Options: FED00000h (default), FED01000h, FED02000h, FED03000h

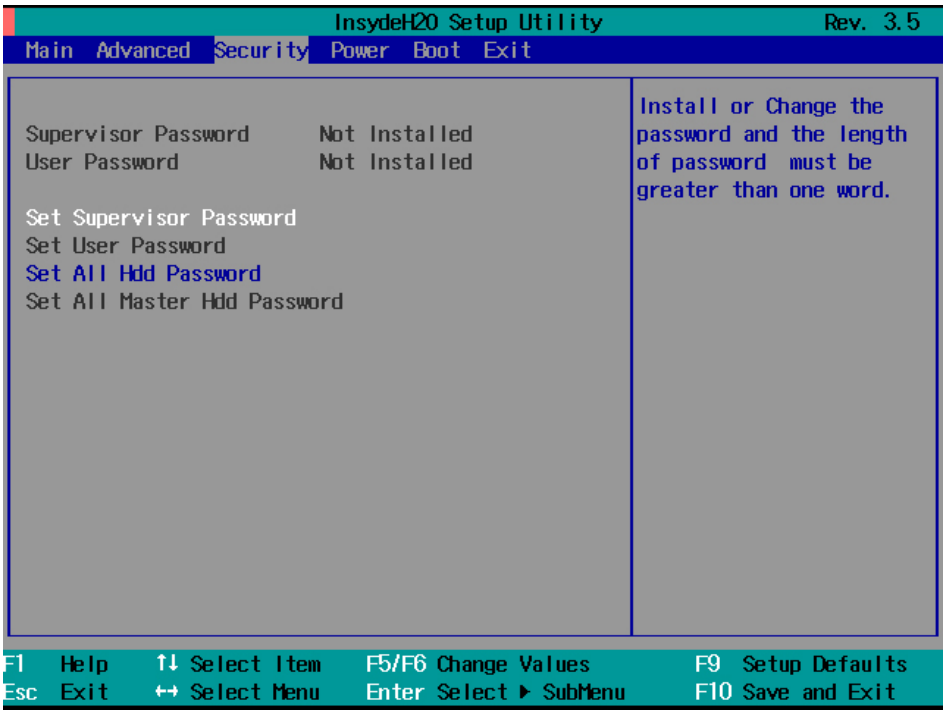
Hardware Monitor

This item allows you to view various self-reported hardware states that include CPU temperature, system temperature, and CPU voltage.


InsydeH20 Setup Utility Rev. 3.5
Advanced
Hardware Monitor
CPU Temperature 48°C/118°F
Vcore (V) 1.120V
V1.05 (V) 1.040V
V1.5_S3 (V) 1.504V
V1.5 (V) 1.488V
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▶ SubMenu F10 Save and Exit

Security Settings

The section allows users to configure security settings like a system supervisor password and user password.


InsydeH20 Setup Utility Rev. 3.5
Main Advanced Security Power Boot Exit
Supervisor Password Not Installed
User Password Not Installed
Set Supervisor Password
Set User Password
Set All Hdd Password
Set All Master Hdd Password
Install or Change the password and the length of password must be greater than one word.
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▶ SubMenu F10 Save and Exit

Set Supervisor Password

This item allows you to set the supervisor password. Select and then enter the password, and then confirm the password again.

Set User Password

This item allows you to set the user password. Select and then enter the password, and then confirm the password again.

Set All HDD Password

This item allows you to set the password for all storage devices on your computers, including CF, DOM and hard disk. You need to enter the password when booting up to use these storage devices.

Please note that to update the password you need to first enter the current password, and then enter a new password. If you wish to simply cancel the password and leave the system unprotected, you may leave the password update box blank.

WARNING

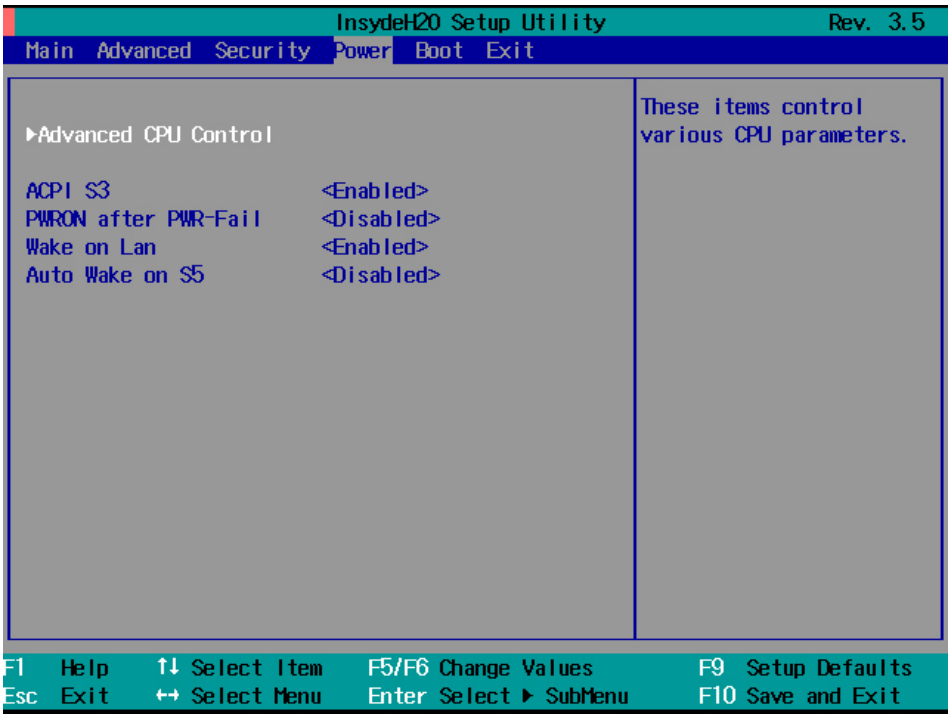
To guarantee your hard drive remains accessible, remember to record your hard disk drive passwords in a secure place for future reference. If you set a security password on your hard disk you will need to enter the same password whenever you access the hard drive, even if it is transferred to another computer.

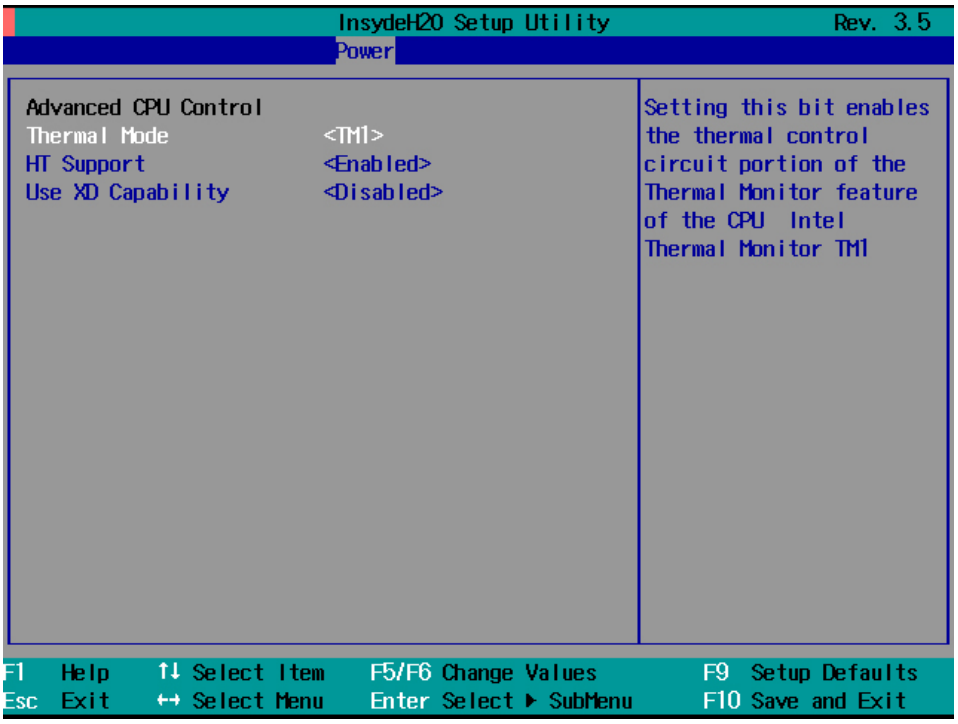
Set All Master HDD Password

This item allows you to set the password for the master storage drive on your computer. You need to enter the password when booting up to use the master hard disk.

Power Settings

The section allows users to configure power settings.




InsydeH20 Setup Utility Rev. 3.5
Power
Advanced CPU Control
Thermal Mode <TM1>
HT Support <Enabled>
Use XD Capability <Disabled>
Setting this bit enables the thermal control circuit portion of the Thermal Monitor feature of the CPU Intel Thermal Monitor TM1
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▶ SubMenu F10 Save and Exit

Advanced CPU Control

Thermal Mode

This item enables Intel's thermal throttling 1 technology in the CPU; it functions as a temperature trip that will throttle the CPU (and thereby decrease performance) when a certain temperature is reached. Enabling this function allows you to configure the thermal control circuit in the operating system userspace.

Options: TM1 (default), Disabled

HT Support

This item enables Hyper-Threading (HT) technology, so that the CPU may utilize simultaneous multithreading. This improves performance for multi-threaded code and gives improved reaction and response time. However, in some instances users may want to disable it to conserve power or reduce CPU cache paging.

Options: Enable (default), Disabled

Use XD Capability

This item allows you to enable/disable the Intel XD function, which provides executable space protection by toggling the NX bit in memory spaces designated as data. This gives a strong protection against buffer overflows by preventing the execution of malicious code that has been delivered into memory space in a hidden data packet. It is strongly advised to enable XD technology.

Options: Disabled (default), Enable

ACPI S3

This item allows you to enable/disable Processor Performance States (P-States) function; this technology is primarily intended for power conservation on laptops. By default, it is enabled.

Options: Enabled (default), Disabled

PWRON After PWR-Fail (Power on after Power Fail)

This item allows you to configure the computer to turn itself back on after a power failure. If a power failure occurs and **Enabled** is chosen, the computer will automatically power up, regardless if it was on or not when the failure occurred. If **Last State** is chosen, the computer will power up if it had been on, or will remain off if it was not on when the failure occurred.

Options: Enabled (default), Disabled, Last State.

Wake on LAN

This feature is used to wake up the system by a LAN device from a remote host.

Options: Enabled (default), Disable.

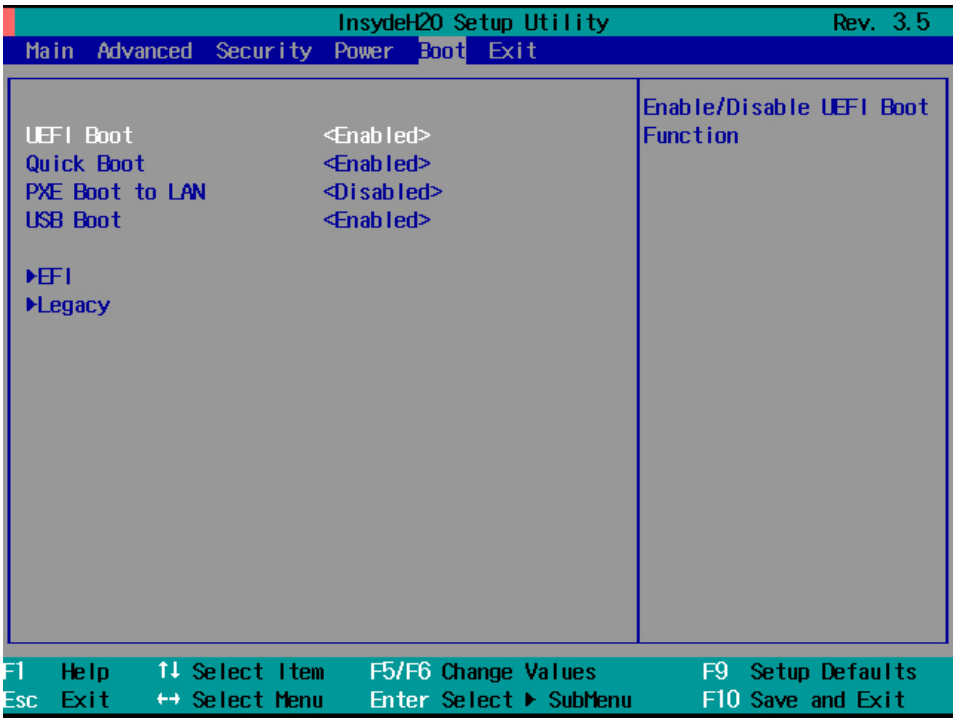
Auto Wake on S5

This item allows you to configure the computer to wake from **S5** status. **S5** stands for **Soft Off**, where the PSU remains engaged but power to all other parts of the system is cut. Auto-wake on S5 schedules a soft-reboot at certain periodic times that may be specified in the BIOS.

Options: Disabled (default); **By Every Day** (user specifies a regular daily time when the computer will power up); **By Day of Month** (user specifies a regular day each month when the computer will power up)

Boot Settings

The section allows users to configure boot settings.



UEFI Boot

This item allows you to enable/disable the **Unified Extensible Firmware Interface**, which allows for remote diagnostics and repair of computers even without an operating system. Users who are concerned about safety or ownership issues may disable it.

Options: Enabled (default), Disabled

Quick Boot

This item allows you to enable/disable quick book function to reduce OS loading times.

Options: Enabled (default), Disabled

PXE Boot to LAN

This item allows you to configure the **Preboot eXecution Environment**'s boot-to-LAN function. **PXE** provides an independent boot environment that may be initialized over a network interface, without intermediary storage devices or local operating systems.

Options: Disabled (default), enabled

USB Boot

This item allows you to enable/disable the system to boot from a USB storage device or network connection.

Options: Enabled (default), Disabled

EFI

This item displays the boot selection for the UEFI boot function.

Legacy

Normal Boot Menu

This item allows you to configure the boot menu.

Options: Normal (default), Advanced

Boot Type Order

This item allows you to select the order in which the computer will search storage devices for bootable images; the highest device on the list will be searched first, then the second, and so on until the computer finds a bootable image. F5/F6 will allow you to change the boot order. Use F5 to select the upper option, and F6 to select the lower option.

Options: Hard Disk Drive (default), CD/DVD-ROM Drive, USB, Others.

Hard Disk Drive

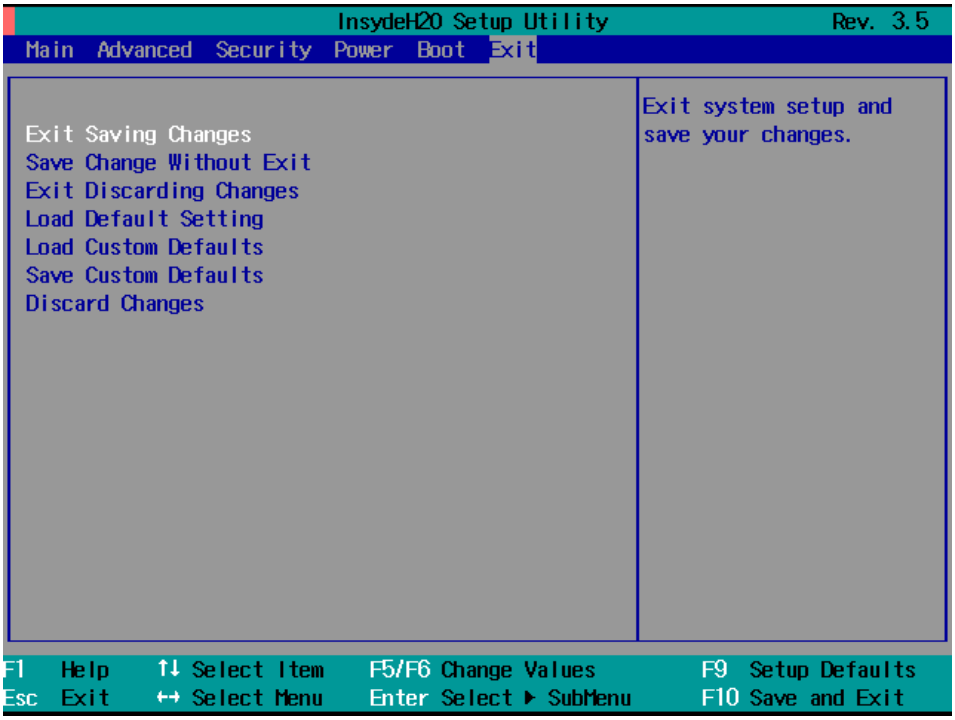
This item allows you to view information returned by the storage device (SSD, HDD) installed in the computer.

USB

This item allows you to view information about any USB device connected to the computer.

Exit Settings

The section allows users to exit the BIOS.


InsydeH20 Setup Utility Rev. 3.5
Main Advanced Security Power Boot Exit
Exit Saving Changes
Save Change Without Exit
Exit Discarding Changes
Load Default Setting
Load Custom Defaults
Save Custom Defaults
Discard Changes
Exit system setup and save your changes.
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▶ SubMenu F10 Save and Exit

Exit Saving Changes

This item saves the values you have just configured and exits the BIOS.

Options: Yes (default), No

Save Change Without Exit

This item saves changes but does not exit the BIOS.

Options: Yes (default), No

Exit Discarding Changes

This item allows you to exit the BIOS without saving any new settings from the user session.

Options: Yes (default), No

Load Defaults Setting

This item resets the entire BIOS to factory default values.

Options: Yes (default), No

Load Custom Defaults

This item loads custom defaults across the entire BIOS.

Options: Yes (default), No

Save Custom Defaults

This item saves the current BIOS settings as the new custom defaults.

Options: Yes (default), No

Discard Changes

This item allows you to discard all settings you have just configured.

Options: Yes (default), No

Upgrading the BIOS

This section describes how to upgrade the BIOS. However, please note that it is easy to permanently damage the computer when upgrading the BIOS. We strongly recommend that you contact Moxa's technical support staff for assistance in order to obtain all necessary tools and the most current advice before attempting to upgrade the BIOS on any Moxa device.

Step 1: Create a Bootable USB Disk.

Before upgrading the BIOS every user should first create a bootable USB RAM drive as a system rescue device. A useful software suite for building USB RAM drives may be found by searching for **HP USB Disk Storage Format Tool**, which may then be downloaded and used to create a bootable RAM drive.

To create a rescue system, you will also need to download the FreeDos system files **kernel.sys** and **command.com** from http://www.freedos.org/kernel/.

Copy the DOS files **kernel.sys** and **command.com** to a specified directory (**C:\FreeDOS** in this example).

Start the HP USB Disk Storage Format Tool and in the drop-down menu labeled **Device** select the USB device that you want to use as a bootable disk.

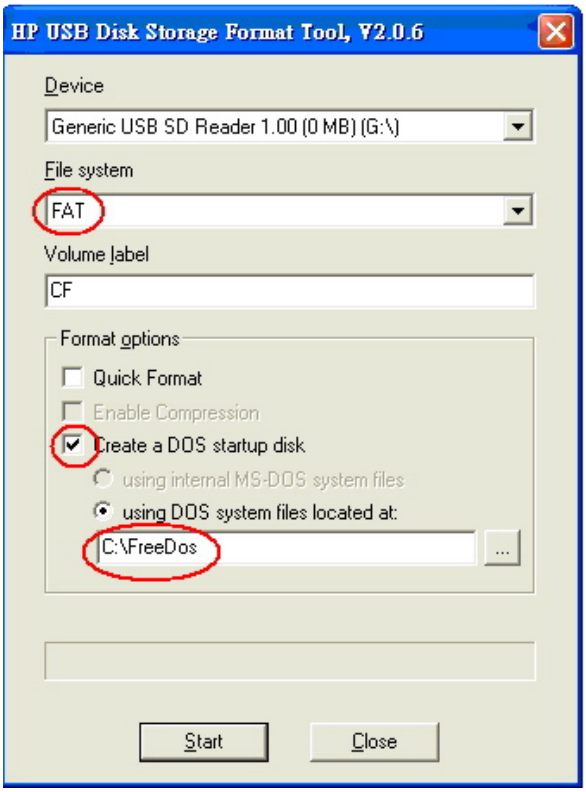
Configure it to use a **FAT** file system from the **File System** drop-down.

Enter a drive name in the **Volume Label** field.

Check the option **Create a DOS Startup Disk** under **Format Options**.

Specify the directory where the system files are located (for example, **C:\FreeDOS**).

Click **Start** to format and create the bootable USB drive.



ATTENTION

We suggest you use a USB drive with under 2 GB in disk space, as larger USB drives may not support the FAT file format and will consequently fail to boot.

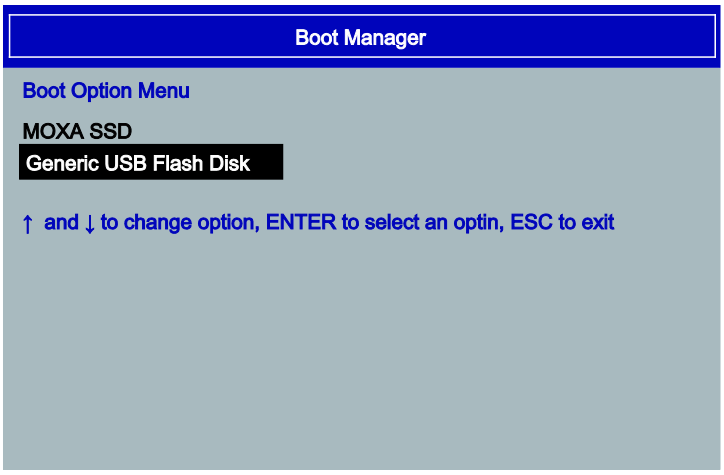
Step 2: Prepare the Upgrade File.

You must use the BIOS upgrade installation file to upgrade the BIOS. You can send your request to Moxa's technical support team at support@moxa.com to get an updated version of the BIOS.

1. Get the BIOS upgrade installation file. The file name should have following format: **139xxSyy..exe.** (xx and yy refers to the version number)
2. Copy the file to the Bootable USB Disk.

Step 3: Run the upgrade program on the EXPC-1319 computer

1. Reboot the computer and go to the Boot Manager by pressing F12 while booting up, before the operating system has begun to load.
2. Select USB Disk as the first boot source. Press Enter to continue.



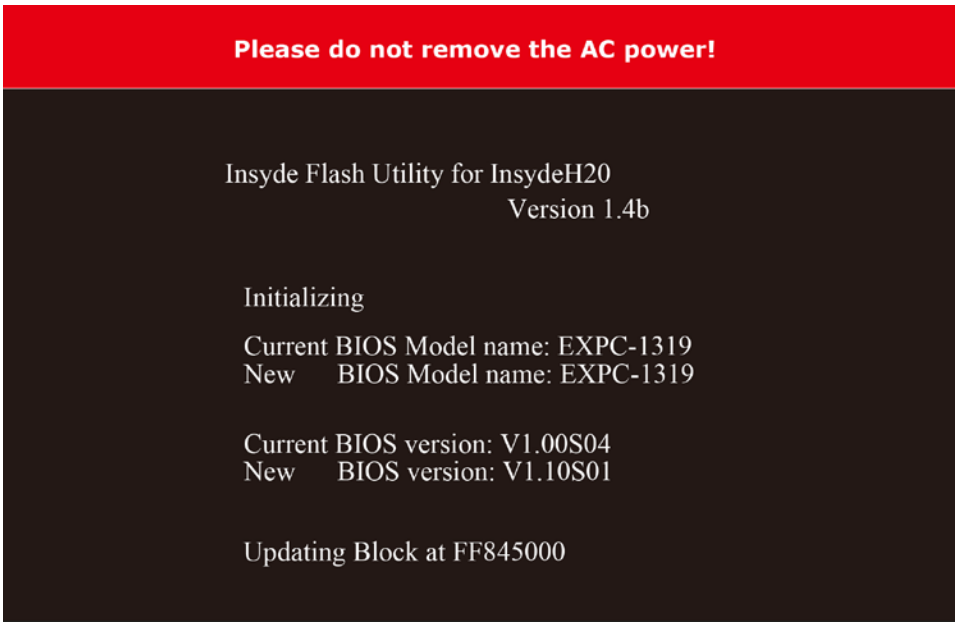
3. Once the computer boots, a DOS screen will appear. Go to the directory where the upgrade file is located. For example, if the upgrade file is stored in the EXPC-1319 folder, type:
   #:/cd EXPC1319

```
C:\ cd EXPC1319
```

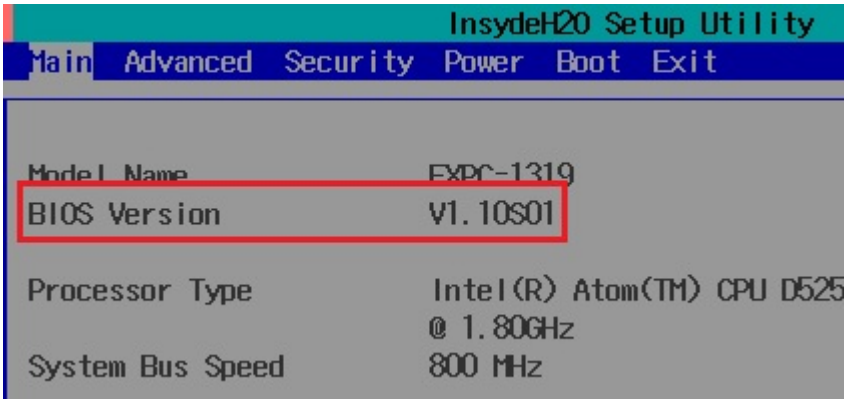
4. Run the upgrade program by typing **13911S01.exe.**
   Please note that the upgrade filename may vary depending on the firmware version.

```
C:\ EXPC1319>13911S01.exe
```

5. The upgrade program will run. Wait until the procedure is finished before initiating any changes to the system. Be patient; the upgrade will take quite a few minutes.
   DO NOT ALLOW THE COMPUTER TO POWER DOWN! DO NOT REMOVE THE USB DRIVE!


Please do not remove the AC power!
Insyde Flash Utility for InsydeH20
Version 1.4b
Initializing
Current BIOS Model name: EXPC-1319
New BIOS Model name: EXPC-1319
Current BIOS version: V1.00S04
New BIOS version: V1.10S01
Updating Block at FF845000

6. Once the upgrade is finished, the computer will automatically reboot. To check and see if the upgrade was successful, navigate to the **BIOS Main Page** and note the **BIOS Version number**.


InsydeH20 Setup Utility
Main Advanced Security Power Boot Exit
Model Name EXPC-1319
BIOS Version V1.10S01
Processor Type Intel(R) Atom(TM) CPU D525
@ 1.80GHz
System Bus Speed 800 MHz

ATTENTION

Do NOT switch off the power supply during the BIOS upgrade. Doing so will likely cause permanent damage to your system!

A

Safety Installation Instructions

A. RTC Battery Warning

Subjective devices can only utilize the Lithium Carbon-mono-fluoride (BR) Coin Cells battery-BR2032, rated 3 V, 195 mAh, manufactured by RAYOVAC Corp.

Caution:

1. Batteries must only be changed in an area known to be non-hazardous.

2. Batteries must be installed with the positive (+) side facing as upper to avoid risk of shorting battery, fire or explosion.

B. Fuse Warning

CAUTION: For continued protection against fire, replace only with same type and rating of fuse.

C. Rackmount Warning

The following or similar rackmount instructions are included with the installation instructions:

(1) Elevated Operating Ambient: If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than the room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

(2) Reduced Air Flow: Installation of the equipment in a rack should be such that the air flow required for safe operation is not obstructed.

(3) Mechanical Loading: Mounting of the equipment in the rack should not create hazards that result from uneven mechanical loading.

(4) Circuit Overloading: Consideration should be given to the connection of the equipment to the power supply and the effect that overloading of the circuits might have on overcurrent protections or supply wiring. Appropriate consideration of equipment nameplate ratings must be noted when evaluating this concern.

(5) Reliable Grounding: Reliable grounding of rack-mounted equipment should be maintained. Particular attention must be given to indirect power connections that do not directly link to the branch circuit (e.g., over power strips).

D. High Temperature Warning

(1) This equipment is intended to be used in a **Restricted Access** location like a locked computer room. Access to this equipment should only be granted to AUTHORIZED SERVICE PERSONNEL or to users who have been instructed about the the potential heat hazard posed by the metal chassis. This computer can become so hot that after a long period of operations users and service personnel must take special care to wear protective clothing before touching it. Only AUTHORIZED PROFESSIONALS should be allowed direct access to an operating device.

(2) External metal parts can get dangerously hot!! Before touching it, give special attention to device temperature! Protective wear will likely be necessary!

B

Statement of Regulatory Approval

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Class A: FCC Warning! This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

European Community

Warning:

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

In addition, please read the following descriptions for various approvals and certifications.

Description	Agency Standard for Marking	Comments
N. A. Safety for Information Technology Equipment	c UL us LISTED I.T.E. E212360	Certification by Underwriter's Laboratories to UL60950-1, 2nd Edition standard and equivalent CSA C22.2 No 60950-1-07, 2nd Edition Standard
N. A. Safety for Hazardous Locations Class I, Div. 2, Groups A, B, C, D	c UL us LISTED I.T.E. for Use in Hazardous Locations 86CY	Certification by Underwriter's Laboratories to ANSI/ISA-12.12.01 -2011 standard and equivalent CSA C22.2 No 213-M1987 Standard
Low Voltage Directive European Safety for Industrial Control Equipment	CE	Self-Declaration in accordance with European LVD Directive 2006/95/EC; Independent 3rd party assessment (Accredited by IEC 17025)

Electromagnetic Compatibility Directive European EMC for Industrial Control Equipment	CE	Self-Declaration in accordance with EMC Directive 2004/108/EC; Independent 3rd party assessment (Accredited by IEC 17025)
Explosive Atmospheres Directive European Safety for Hazardous Locations Equipment Group II, Category 3, Gas Group IIC	Ex II 3G DEMKO 13 ATEX 1307024U	Certification with ATEX Directive 94/9/EC; Independent 3rd party assessment (Notified Body: DEMKO) Ex II 3G DEMKO Ex ic nA nC IIC Gc
IEC Certification Scheme for Explosive Atmospheres Equipment Group II, Category 3, Gas Group IIC	IEC IECEx IECEx UL 13.0043U	IECEx Certificate of Conformity; Independent 3rd party assessment (Certified by UL) Ex ic nA nC IIC Gc IEC 60079-0, 60079-11, 60079-15

Explosion Hazard

- Component substitutions may impair suitability for UL Class 1 Division 2, ATEX Zone 2, EN 60079-15, and IECEx.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- Do not install or remove CompactFlash card, SSD, or HDD while circuit is alive.
- The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble or incinerate. Dispose of used batteries promptly. Keep away from children.
- The proper method for removing power from the unit is to switch off power at the circuit breaker.
- Enclosure Cover Warning - Explosion hazard - Do not remove cover unless area is know to be non-hazardous. (Warning is applicable to any removable cover on the unit - HDD access door, etc.)
- I/O Cover Warning - For hazardous area installations reference manual for field wiring control drawing.
- The device is intended for mounting in a tool-accessible ATEX-certified or IECEx-certified IP54 enclosure and used in an area of not more than pollution degree 2 as define by IEC 60664-1.